

Workbench

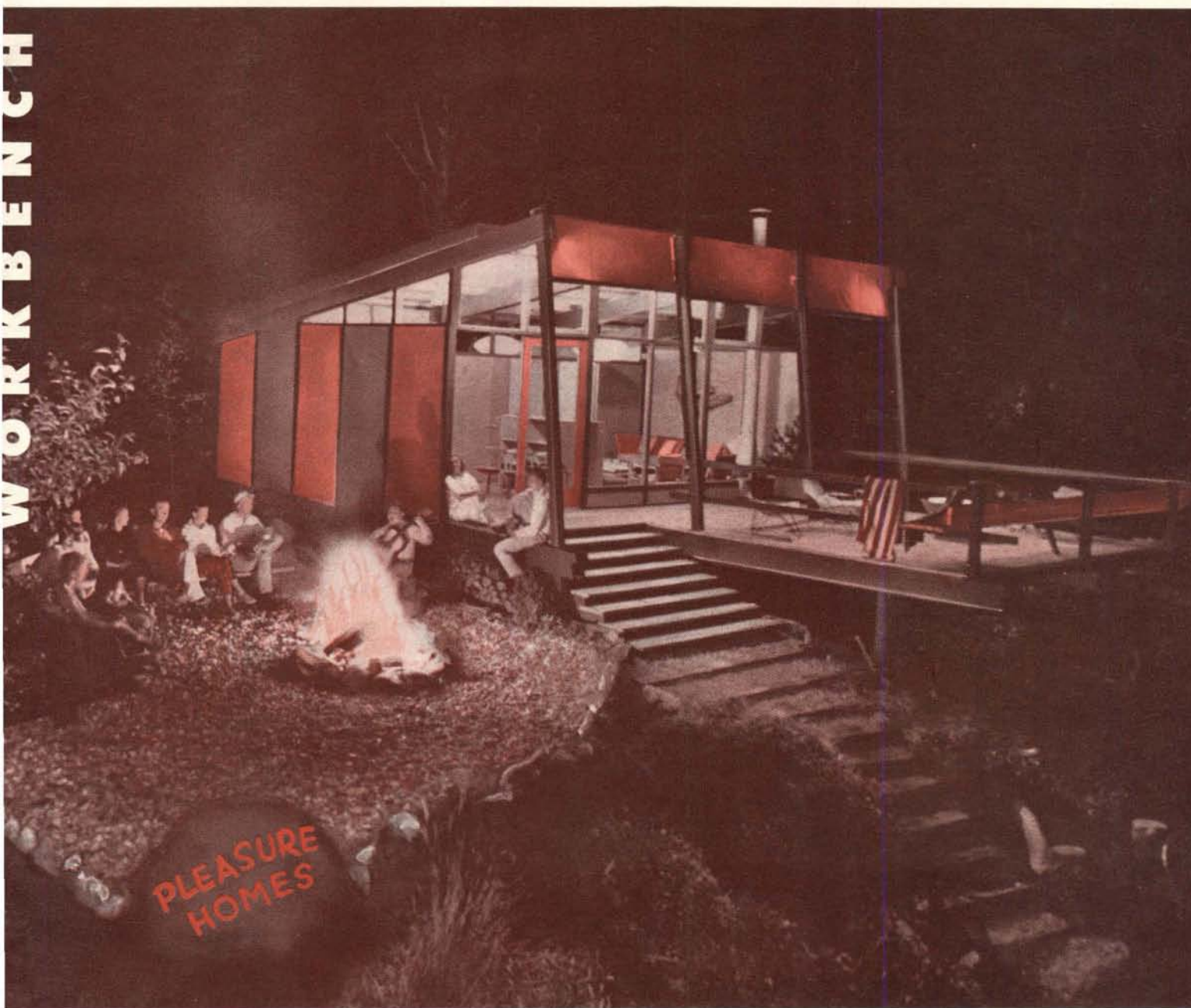


SAW FILERS
AND
TOOL SHARPENERS

SEPTEMBER
OCTOBER
1960

35^c
ICD

WORKBENCH



PLEASURE
HOMES

GARAGE
TO
ROOM
CONVERSIONS

EXPANDABLE
DINING
TABLE

CAR-TOP
CARRIERS

CAMERA
MAINTENANCE
AND
REPAIR

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CITY _____

ZONE _____ STATE _____

I'd like to give this to my fellow men... while I am still able to help!



I was young once, as you may be—today I am older. Not too old to enjoy the fruits of my work, but older in the sense of being wiser. And once I was poor, desperately poor. Today almost any man can stretch his income to make ends meet. Today, there are few who hunger for bread and shelter. But in my youth I knew the pinch of poverty; the emptiness of hunger; the cold stare of the creditor who would not take excuses for money. Today, all that is past. And behind my city house, my

summer home, my Cadillacs, my Winter-long vacations and my sense of independence—behind all the wealth of cash and deep inner satisfaction that I enjoy—there is one simple secret. It is this secret that I would like to impart to you. If you are satisfied with a humdrum life of service to another master, turn this page now—read no more. If you are interested in a fuller life, free from bosses, free from worries, free from fears, read further. This message may be meant for you.

By Victor B. Mason

I am printing my message in a magazine. It may come to the attention of thousands of eyes. But of all those thousands, only a few will have the vision to understand. Many may read; but of a thousand only you may have the intuition, the sensitivity, to understand that what I am writing may be intended for you—may be the tide that shapes your destiny, which, taken at the crest, carries you to levels of independence beyond the dreams of avarice.

Don't misunderstand me. There is no mysticism in this. I am not speaking of occult things; of innumerable laws of nature that will sweep you to success without effort on your part. That sort of talk is *rubbish*! And anyone who tries to tell you that you can *think* your way to riches without effort is a false friend. I am too much of a realist for that. And I hope you are.

I hope you are the kind of man—if you have read this far—who knows that anything worthwhile has to be *earned*! I hope you have learned that there is no reward without effort. If you have learned this, then you may be ready to take the next step in the development of your karma—you may be ready to learn and use the secret I have to impart.

I Have All The Money I Need

In my own life I have gone beyond the need of money. I have it. I have gone beyond the need of gain. I have two businesses that pay me an income well above any amount I have need for. And, in addition, I have the satisfaction—the deep satisfaction—of knowing that I have put more than three hundred other men in businesses of their own. Since I have no need for money, the greatest satisfaction I get from life, is sharing my secret of personal independence with others—seeing them achieve the same heights of happiness that have come into my own life.

Please don't misunderstand this statement. I am not a philanthropist. I believe that charity is something that no proud man will accept. I have never seen a man who was worth his salt who would accept

something for nothing. I have never met a highly successful man whom the world respected who did not sacrifice something to gain his position. And, unless you are willing to make at least half the effort, I'm not interested in giving you a "leg up" to the achievement of your goal. Frankly, I'm going to charge you something for the secret I give you. Not a lot—but enough to make me believe that you are a little above the fellows who merely "wish" for success and are not willing to sacrifice something to get it.

A Fascinating and Peculiar Business

I have a business that is peculiar—one of my businesses. The unusual thing about it is that it is needed in every little community throughout this country. But it is a business that will never be invaded by the "big fellows". It has to be handled on a local basis. No giant octopus can ever gobble up the whole thing. No big combine is ever going to destroy it. It is essentially a "one man" business that can be operated without outside help. It is a business that is good summer and winter. It is a business that is growing each year. And, it is a business that can be started on an investment so small that it is within the reach of anyone who has a television set. But it has nothing to do with television.

This business has another peculiarity. It can be started at home in spare time. No risk to present job. No risk to present income. And no need to let anyone else know you are "on your own". It can be run as a spare time business for extra money. Or, as it grows to the point where it is paying more than your present salary, it can be expanded into a full time business—overnight. It can give you a sense of personal independence that will free you forever from the fear of lay-off, loss of job, depressions, or economic reverses.

Are You Mechanically Inclined?

While the operation of this business is partly automatic, it won't run itself. If you are to use it as a stepping stone to independence, you must be able to work with your hands, use such tools as hammer and screw driver, and enjoy getting into a pair of blue jeans and rolling up your sleeves. But two hours a day of manual work will keep your "factory" running 24 hours turn-

ing out a product that has a steady and ready sale in every community. A half dollar spent for raw materials can bring you six dollars in cash—six times a day.

In this message I'm not going to try to tell you the entire story. There is not enough space on this page. And, I am not going to ask you to spend a penny now to learn the secret. I'll send you all the information, free. If you are interested in becoming independent, in becoming your own boss, in knowing the sweet fruits of success as I know them, send me your name. That's all. Just your name. I won't ask you for a penny. I'll send you all the information about one of the most fascinating businesses you can imagine. With these facts, you will make your own investigation. You will check up on conditions in your neighborhood. You will weigh and analyze the whole proposition. Then, and then only, if you decide to take the next step, I'll allow you to invest \$15.00. And even then, if you decide that your fifteen dollars has been badly invested I'll return it to you. Don't hesitate to send your name. I have no salesmen. I will merely write you a long letter and send you complete facts about the business I have found to be so successful. After that, you make the decisions.

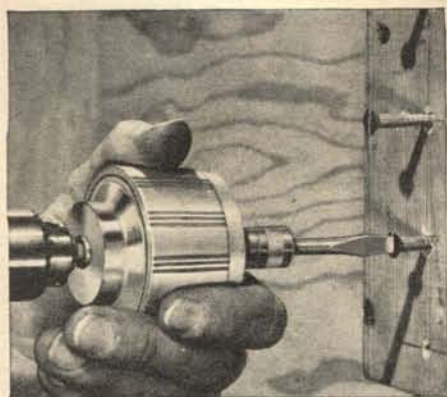
Does Happiness Hang on Your Decision?

Don't put this off. It may be a coincidence that you are reading these words right now. Or, it may be a matter that is more deeply connected with your destiny than either of us can say. There is only one thing certain: If you have read this far you are interested in the kind of independence I enjoy. And if that is true, then you must take the next step. No coupon on this advertisement. If you don't think enough of your future happiness and prosperity to write your name on a postcard and mail it to me, forget the whole thing. But if you think there is a destiny that shapes men's lives, send your name now. What I send you may convince you of the truth of this proverb. And what I send you will not cost a penny, now or at any other time.

VICTOR B. MASON

**1512 Jarvis Ave., Suite M-6-K
CHICAGO 26, ILLINOIS**

*the drill attachment that
doubles usefulness
of any portable drill*



Supreme Products' New **VERSAMATE**[®] POWER DRILL SPEED REDUCER

10 reasons why Versamate is the new 'must' tool for your shop:

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| 5. Fast, safe, easy to operate | 6. Enough power for 1/2" masonry drilling |
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| 9. Industrial tool quality throughout | 10. Low price... just \$9.95 |

If you own an electric drill you can easily double its value by using it with a Supreme Versamate. Versamate speeds up every job. For instance: Drill pilot holes for screws with your electric drill... drive the screws with a Versamate. You'll do far better work — faster — without blisters. It's an amazing tool that has the endorsement of ships' carpenters, cabinet makers and other skilled mechanics — yet is simple and easy for anyone to use. Ask your tool dealer for a demonstration.



Ask your tool dealer for
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By the makers of Versamatic
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DIVISION OF A-S-R PRODUCTS CORP.

WORKBENCH volume 16 • number 5

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Jack Tillotson, Publisher

Jay W. Hedden, Editor

E. Le Grande, Assistant Editor

I. Selonke, Staff Artist

M. Niblo, Editorial Assistant

M. V. Greene, Adv. Production

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LETTERS TO THE EDITOR



Dear Mr. Hedden:

This tea cart I made on a lathe, (wheel spokes and rims), and with a jig saw for cutting the fretwork. Tires for the wheels are lengths of windshield-wiper hose.
Mr. J. W. Rankin, Fresno, Calif.

Dear Mr. Rankin:

The cart is a beautiful piece of craftsmanship. (We have a color snapshot that could not, of course, be printed, which shows the beauty of the wood Mr. Rankin used.) An accessory for the cart is a tray with matched-grain birch bottom and mahogany sides.

Dear Sir:

I am an ardent worker at marquetry, and am anxious to contact any person (or club) interested in this hobby. My primary interest is in the subsequent exchange of veneers—variety being the answer insofar as contrast is concerned. Trusting you will oblige, I remain, yours faithfully, Alan D. Walker, P.O. Orbost, Victoria, Australia.

Dear Mr. Walker:

We are publishing your letter in the hopes that readers who have the hobby of marquetry will write you and exchange ideas, and, possibly veneers, as you request. (In the United States the term marquetry is seldom used; here we call it inlaying. This work is often seen on table tops, used to make checker boards and even "paintings" of various hues of wood.) Readers interested in knowing more about this ancient and interesting woodworking art should write for a free catalog to Albert Constantine and Son, Inc., 2050 Eastchester Rd., New York 61. When writing to Mr. Walker please keep in mind that overseas mail requires about double the postage of comparable domestic mail.

Dear Editor:

I am a coach for a Little League team. Getting proper hitting practice is quite a problem because we have no one that can get the ball over. Since buying an automatic throwing machine is out of the question, I would like to make one. Where can I obtain the plans?
W. L. Wayman, Birmingham, Ala.

Dear Mr. Wayman:

We frankly have never heard of an automatic pitching machine except in the big leagues. We do know that there are many Little Leagues and Pony Leagues that could use such a device. Does any reader know of a source for plans, or has anyone built such a unit? We would be glad to publish the plans for such a pitcher and pay regular page rates for the article. The pitcher must be proven workable and dependable.

Dear Sir:

I notice that in some articles you give the name of a manufacturer of a product, but do not give his address. Can we get the address by writing to you directly?
Mr. R.L.D., Minneapolis, Minn.

Dear Mr. R.L.D.:

Yes, you can obtain the name of any manufacturer of any product mentioned in an article by writing to me. However, to keep down our volume of mail, which does get quite heavy sometimes, we plan in future issues of **WORKBENCH** to publish a list of names and addresses of manufacturers or distributors of any product mentioned in articles on a page at the back of the magazine. Look for this in a couple of more issues.

Dear Sir:

Do you or some of your staff, or possibly a reader, know of a not too complicated way of making an automatic control for a dehumidifier?
Roy K. Parks, Columbus, Ohio.

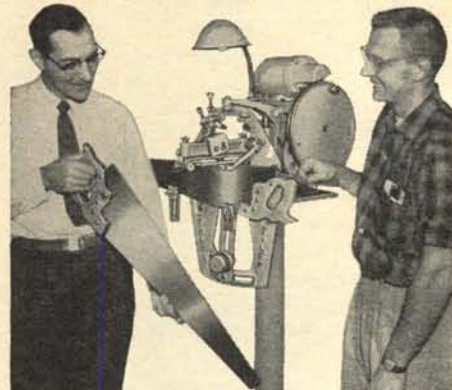
Dear Mr. Parks:

Unfortunately we have no information on such a device. Perhaps one of our readers could come up with such an automatic control.

Jay W. Hedden

Jay W. Hedden, Editor

CASH FILING SAWS



Make from \$3 to \$6 an hour spare time or start a full time business with the

FOLEY SAW FILER

Here is a steady repeat CASH business you can start at home in your basement or garage, while you are working at your regular job. No experience is necessary to turn out perfect cutting saws—"the first saw I sharpened came out 100%." I think the Foley Saw Filer is a marvel of perfection," writes Clarence E. Parsons. No canvassing—every saw you sharpen will bring you new customers. You will find you can make from \$3 to \$6 an hour—\$20 to \$30 a week in your spare time as a starter. "My spare time saw filing business has made me \$952 these first ten months," says R. T. Chapman.

With the new 1960 model 200 Foley Saw Filer you can file all hand saws, also band and both "combination" (rip and crosscut) and cross cut circular saws. It is easy to operate—simple adjustments—no eyestrain. Patented jointing principle evens up all irregular teeth and makes an old saw cut just like new.

This Free Book "MONEY MAKING FACTS" Shows How to Start

"MONEY MAKING FACTS" shows you how others have added hundreds or thousands of dollars to their income and how you can develop into a general repair shop that will be your own business. This is a CASH business with a small investment, no overhead, no stock of goods to carry. Time Payments if desired. Mail coupon now for free book and nationwide survey of saw sharpening charges. No salesman will call.

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1040-0 Foley Bldg.
Minneapolis 18, Minn.

Send me free book "MONEY MAKING FACTS" and Saw Sharpening Price Guide.

Name

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keeping up with craft and home products

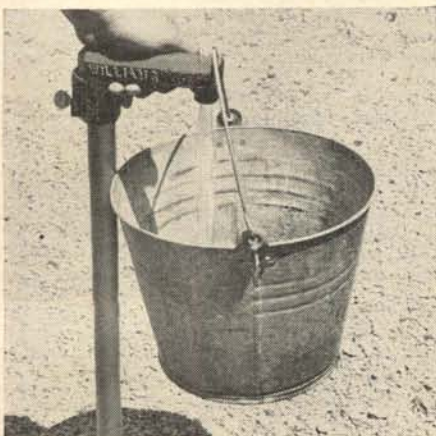
In communicating with companies whose products are described in this department, please mention **WORKBENCH**.

Permanent Photo Mounting



PHOTOS AND ARTWORK will not curl and adhesive will not "bleed" through when photos are mounted with this material that will bond print to paper, leather, even glass. Sprayed adhesive is allowed to dry, then warm iron is used to "set" adhesive. \$2.25 from John G. Marshall Co., 151 N. 9th St., Brooklyn 11, N. Y.

Balanced-Valve Hydrant



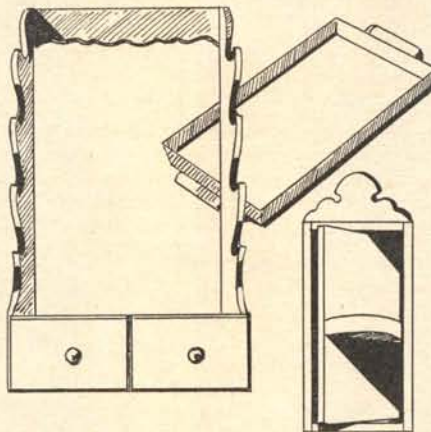
OPERATED BY raising and lowering the hydrant head, this valve is completely adjustable from trickle to full flow, and can be locked in any position. When shut off, the valve drains, eliminating the problem of freezing. Valve maintenance requires only the replacing of standard O-rings, available from the manufacturer or many other sources. Williams Products Co., Joliet, Ill.

Doorbell "Know-How"



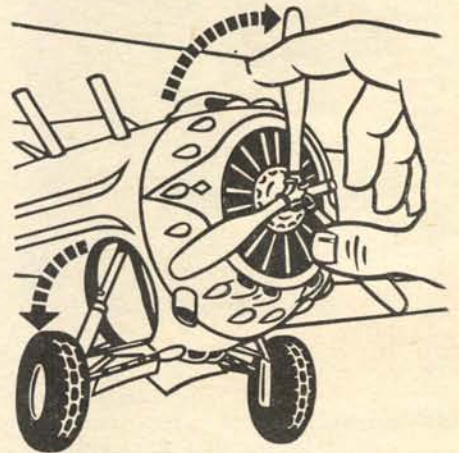
FOLLOWING INSTRUCTIONS in a booklet, "The How-To of Home Signaling," even pretty Julie Newmar—alias Stupefying Jones of Li'l Abner fame—can rewire a doorbell. Fully illustrated, the booklet tells how to repair and install doorbells, fire-alarm systems, automatic door and gate openers, etc. Free copy from your local hardware or building-supply dealer, or send dime for postage and handling to Edwards Co., Inc., Norwalk, Conn.

Antique-Reproduction Kits



PINE HAND-CRAFTED furniture items, from spice shelves to gun racks are available in kits for assembling-yourself. Maker of the kits says he learned cabinetmaking at 50, is still going strong at 66. Prices for kits range from \$4.95 to \$9.95. For more information write: Lynn Homecraft Service, P. O. Box 171, Lititz, Pa.

Retracting-Wheel Model

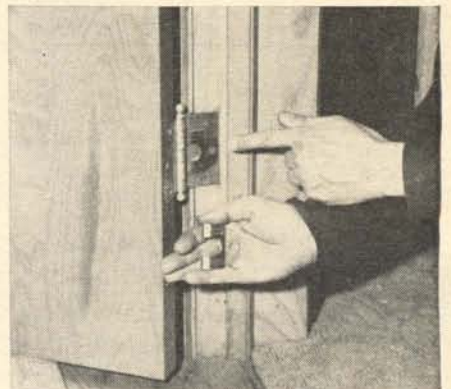


TURNING PROPELLER to the left raises landing gear, turning it to right lowers the gear on this plastic model of the Gulfhawk. Model also has sliding canopy, retracting tail wheel and movable control surfaces. Gulfhawk (Kit PA 58) \$1.98 from Monogram Models, Inc., 3421 W. 48th Place, Chicago 32, Ill.

Free Electronics Catalog

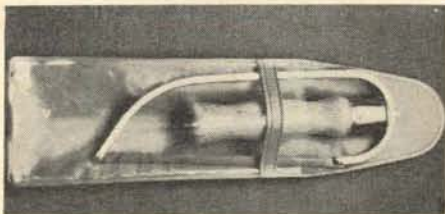
SECOND PRINTING was required because of huge demand, so if you did not get one, the Lafayette 1960 Electronics Catalog now is available. Write to Dept. PR, Lafayette Radio, 165-08 Liberty Ave., Jamaica 33, N.Y.

Hinge-Mounted Doorstop



FRICTION BRAKE fitted between leaves of hinge holds door in any desired position, despite drafts from wind, exhaust fan, etc. DoorBrakes, two for \$1. Dept. WB, Magnolia Machine Works, 618-620 Magnolia Ave., Elizabeth 4, N. Y.

Pocket Hacksaw



FOLDED IN PLASTIC CASE this handy saw is just 7½ in. long, weighs just 4 oz. Handle can be locked at any position on frame. Ideal for campers, handy for the workshop; will cut metal, plastics, wood. \$2.98, Magic Mold, 473 Livonia Ave., Brooklyn 7, N. Y.

Self-Lighted Screw Driver



NO PROBLEM of getting light on your work when you use this screw driver that contains a light in the handle. Driver is furnished complete with four blades, two of them Phillips, for the chuck-type handle. Including the standard-size dry cells, screw driver sells for \$2.95. Truline Sales Co., Dept. No. 29, P. O. Box 1158, Studio City, Calif.

Magnet Has 50-Lb. Grip



"ALNICO 5," permanent-magnet assembly has 50-lb. holding power. Can be used to retrieve tools, tackle, etc. from fresh or salt water, tanks, drains and the like. Many other practical uses. Size 2½ x 3 x 3 in., weight, 2 lb. 6 oz. \$5 from Magnetics, Inc., 7777 Sunset Strip, Los Angeles 46.

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HUNDREDS OF THINGS to do and make FOR FUN AND PROFIT

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New! Complete details 6 different houses. Cat. No. 364 . . \$1.50

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Gallop horse, bull chasing farmer, etc. Full-size patterns. No. 313 . . \$1.00

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Desks for all purposes, six fine designs. No. 371, \$1.50

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Chairs, tables, benches, folding, roll-about. Modern designs. No. 348 . . \$1.50

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Unusually cute designs. Full-size patterns. No. 347, \$1.50. Use Craftplans to make things for FUN and to SELL.

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New! Dramatic presentation of Nativity Scene . . rich in beauty and color. Creche height 8 ft. Full-size patterns all figures. No. 370 . . \$2.00

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Store SAFELY Shotguns, Rifles, Handguns; also fishing rods, lures, etc. No. 344 . . \$1.00

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Latest fashions in wall decor. All patterns full-size. No. 342 . . \$1.00

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16 Designs. Want bird houses that are completely different; if so, don't overlook these plans. No. 341 . . \$1.00

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24 different. More fun than a barrel of monkeys. No. 338 . . \$1.00

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LETTERING PATTERNS, 5 Distinctive Alphabets—2, 3" high. Caps, small letters, numerals. 352, \$1.50.

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Tray for every occasion. No. 332 . . \$1.00

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How to make lamps like you find in smart shops. No. 308 . . \$1.50

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12 designs, complete how-to-make details. No. 367 . . \$1.50

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\$6.00 WORTH OF PLANS FOR \$5
If price of plans you order is \$5.00 we'll include without extra charge another dollar's worth of plans of your selection. If price of plans selected is \$10 you get \$2.50 worth of Free plans. Your money back if you're not satisfied.

18 DECORATOR STYLES, MODERN WALL CLOCKS
Designs compare favorably with clocks selling for up to \$50. No. 326 . . \$1.00

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With Wood Gears. All details and patterns needed to duplicate famous original made in 1794. No. 325 . . \$1.50

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Pipe racks, cigarette dispensers, smoking stands, etc. No. 323 . . \$1.00

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Powered by small gas engines. Two designs. Jeep. No. 322 . . \$1.00

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Plans on year-round awnings, garage cupola, Dutch windmill, 57 trellises, fences, storm windows, etc. No. 309 \$1.50

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Action Compares with Costly Slides

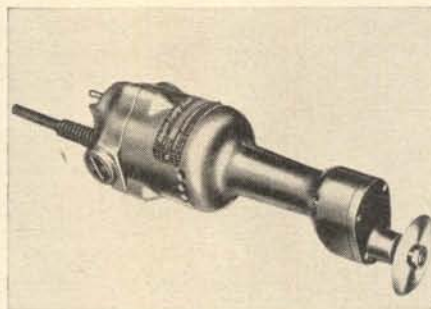
Rear View

Nail two Roll-eez "N" on rail at drawer opening.

If drawer has center guide, nail third Roll-eez "N" on top of back in the middle, and Roll-eez "M" on bottom of back straddling guide.

Craft and Home Products

Oscillating Safety Saw



DESIGNED ORIGINALLY by an orthopedic surgeon to cut plaster casts without harming human tissue, this safety saw can be used to cut wood, plaster, plastics and other materials with a hard surface. The saw will not cut soft tissue, so is perfectly safe to use. Stryker Safety Saw is manufactured by Orthopedic Frame Co., 420 Alcott Ave., Kalamazoo, Mich.

Circular Slide Rule

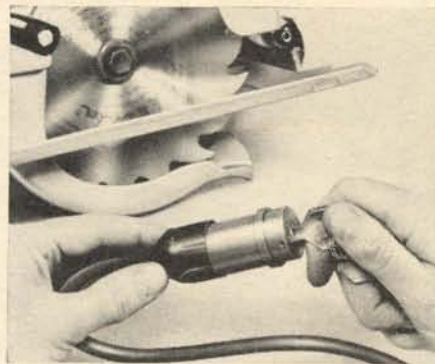


HANDY FOR simple calculations is this circular slide rule that can be used for multiplying, dividing, finding proportions. If you're in business, write on your letterhead for a free one, mentioning WORKBENCH. If you are not in business, one can be obtained for 50 cents. General Industrial Co., 1788 J Montrose Ave., Chicago 13.

Masonry Water Repellent

LIQUID DRIES to form an invisible coating on all above-ground exterior masonry walls, sealing them against dirt and moisture for as long as 10 years. Applied with brush or small garden spray, 1 gal. of Permapel is mixed with 7 gal. of water to make 8 gal. of solution. For free sample write: Perma-Stone Co., 719 E. Hudson Street, Columbus 11, Ohio.

Lock For Power Tools



CALLED POWER-BLOK, this new lock slips onto the prongs of the plug in the cord of an electric tool and clamps in place when a key is used. Assures that children or unauthorized persons do not use the tool. \$1.49, Hurd Lock & Mfg. Co., Almont, Mich.

King-Size Checker Game



TEXAS CHECKERS is played on 30x30-in. flexible-plastic board with checkers that are difficult to lose. About \$2.98 at most stores. Mfd. by Azco Products Corp., Pawtucket, R. I.

Unique Wall Decorations For Den or Rumpus Room



IF YOU have admired the covers of record albums, here is a chance to buy them for wall decorations. Assortment of 20 for \$1.50 plus 50 cents handling. Shipped prepaid. Sabra Records, P. O. Box 397, Radio City Station, N. Y. 19, N. Y.

Does your project require

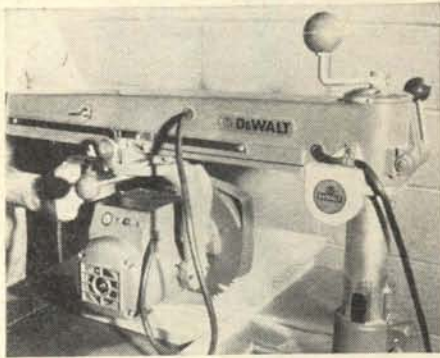
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We can furnish top quality remnant trims of fine mesh bronze wire cloth as used in paper making, from 1/2" sq. to any size your projects require. Write, advising size and possible quantity requirements. We will gladly provide free sample.

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Pull-Back for Saw Motor



WHEN MOTOR of radial-arm saw is released, new Saf-T-Back automatically returns it to rear of the table out of the way. Device consists of spring-loaded cable that hooks to motor, cable is in metal container that is screwed to rear of saw-arm casting. DeWalt Inc., Lancaster, Pa.

Home-Study Course In Built-Up Roofing

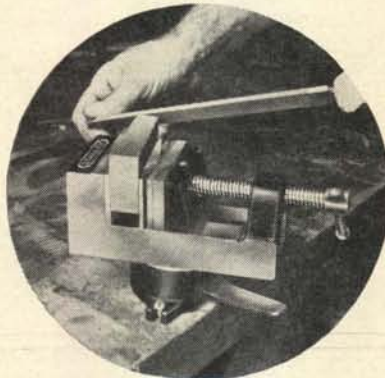
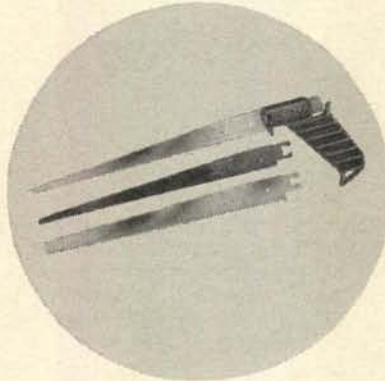
ANY ABLE-BODIED man of average intelligence can produce an excellent roof job from the very beginning, claims the author of this book. Illustrated book shows how to apply the material, equipment needed, how to figure cost and profits on any size roof. For complete information write Kee Roofing Associates, P. O. Box 584, Van Alstyne, Texas.

Life-Size Human Skull



BOTH EDUCATIONAL and interesting is this full size skull that can be disassembled. A real conversation piece when used as a decoration, the skull also can aid doctors, dentists, nurses and teachers in explaining anatomy. For the layman who is baffled by TV commercials that show all those "zones" and "passages," the skull will provide answers. Clip this item, mail check or money order to Edmund Scientific Co., Barrington, N. J. Include your name and address.

3



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Stanley Swirlaway sanding attachment works better because sanding is 100% swirl-free. You don't run off working surfaces, gouge or mar the wood. It's easier because you never use pressure—the ball-joint keeps the disc in full contact with the surface of the work, and you get a gliding smooth finish.

Ask your dealer for Stanley Swirlaway sanding attachment, carded with three sanding discs for new low price—\$3.29.

BONUS offer! While they last your dealer is offering a set of Early American Plans—woodworking designs by famous POST cover artist, Stevan Dohanos—free with each Swirlaway sander. Get this 50¢ value now.

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Stanley Keyhole saw cuts curves, circles, in and out of corners. Quick change head holds wood cutting blade, metal cutting blade or pruning blade in 8 positions. Grip is positive, blade rigid.

Buy No. 175C Keyhole saw with wood cutting, metal cutting and pruning blades, only \$3.50.

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Stanley-Yankee vises like this one are indispensable when you have work you want to hold for drilling, milling, cutting, grinding or filing. These are precision tools, with strong grip, and removable hardened and ground steel jaw faces. Swivel or swivel-tilt base available separately. Jaw openings from 1½ to 4 inches, prices start at \$5.50.

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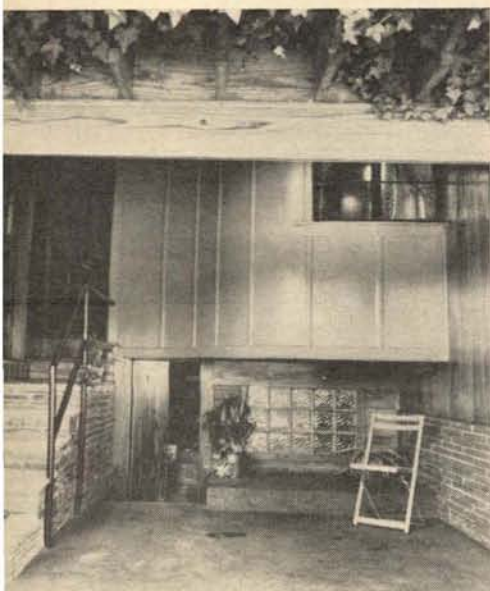
the tool box of the world

1. Window above the garage door was installed to provide more light for the office and the basement workshop below it.



Garage Balcony Provides An Office

RAYMOND J. JEFFREYS



2. View looking into garage shows glass-block wall in basement workshop, curved wall of the office above and its window.

WHAT DO YOU DO when you run out of space in a small home, where there is no basement and only a one-car, attached garage? I needed a workshop and an office den, but still wanted to keep the car under cover. There was no room for a carport. My solution was to build a balcony at the back end of the garage on which is located the office, with a basement under part of the office for a workshop. I poured a concrete "island" 6 in. high, and just long enough to keep the car from striking the back wall of the garage. The hood of the car fits under the balcony. To help light

the basement workshop, the front wall is made of glass block, Fig. 2. There also is a window in the front wall of the office. Light from outside is brought in through a large window that was installed above the garage door, Fig. 1.

Although the wall of the office could have been made straight across the garage, this would have included the kitchen door in what I wanted as a strictly private working office, Fig. 3. My wife and friends could wander in from the kitchen too easily. For this reason I made the front wall curved, as in Fig. 6. The kitchen door now



3. Curved wall of office is shown here in photo taken from rear of the room. Kitchen door, tile platform are at right.



4. This view of the office from the screened-in porch, through the washroom illustrates the convenient access to the summer eating area.



5. Brick rear wall of the office (originally the wall of the garage) contrasts beautifully with paneling of the other office walls.

opens on the blank wall of the office, Fig. 3. At the back of the garage was a washroom, while behind that was a screened-in porch we used for summer dining, Fig. 4. A door from the office provides access to the washroom, and a few steps further takes me to the dining area when I'm called for meals, Fig. 5.

With minor modifications this balcony idea could be used to make an extra bedroom, TV room or hobby center. Although the basement is small, measuring approximately 9 x 12 ft., it would do well as a compact workshop for any home craftsman. If your garage is bigger than a one-car unit, the basement and balcony will provide even more space. Incidentally, I did all the work myself, after being told that the job was too difficult and expensive for me to tackle. △ △

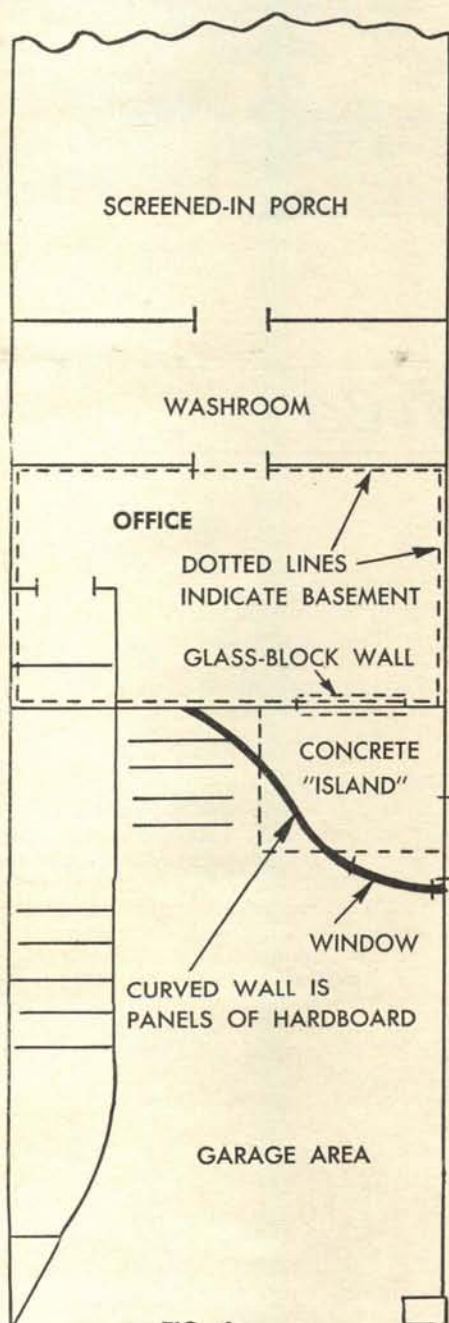
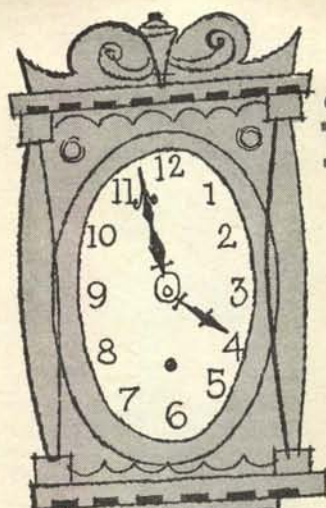


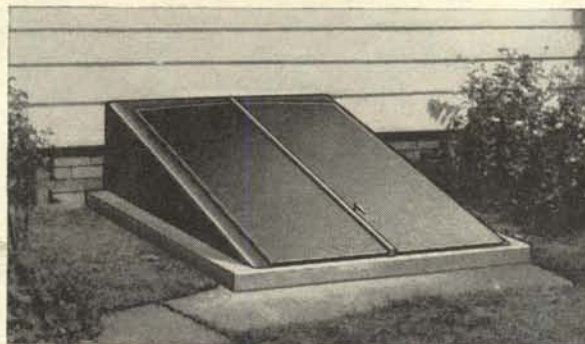
FIG. 6



in just a
few hours...



you can make this



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REPLACE IT WITH A BILCO DOOR



You can replace your worn wooden hatch with an all-steel Bilco basement door in a few hours, using simple hand tools.

Detailed illustrated instructions make perfect installation easy for any handyman.

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1. This photo and the cover show a 3-stage beach cabin that can be built at low cost. Fig. 3 shows various stages of construction, excellent add-on design.

Pleasure Homes



2. Two 16 x 20-ft. shelters face each other across a 16 x 20-ft. deck, in this roomy vacation cabin that can be built in two economical stages with detailed plans.

PLANS FOR BUILDING any of the vacation-time pleasure homes shown on these pages can be obtained for just 25 cents. Should none of these designs suit you, plans for other shapes, kinds and sizes of vacation homes are available at the same low cost. Each of the plans is complete with materials list, working drawings, step-by-step sketches and even pictures of finished buildings. Many of the pleasure homes can be built in several stages, each stage of construction producing a completely livable dwelling. As more time and money becomes available the original dwelling is expanded. All homes are designed around the use of plywood panels for exterior walls. This permits "pre-building" a structure at home, in sections, then trucking the units to the building site. Pre-building permits rapid assembly of the home, an important factor when vacations and weekends are the only time you have for such a project. Fig. 1 and the cover show a 3-stage beach house, Fig. 3 illustrating the various stages. Fig. 4 shows a home built with the ancient A-frame design, now sometimes called a "teepee" design. Comparatively

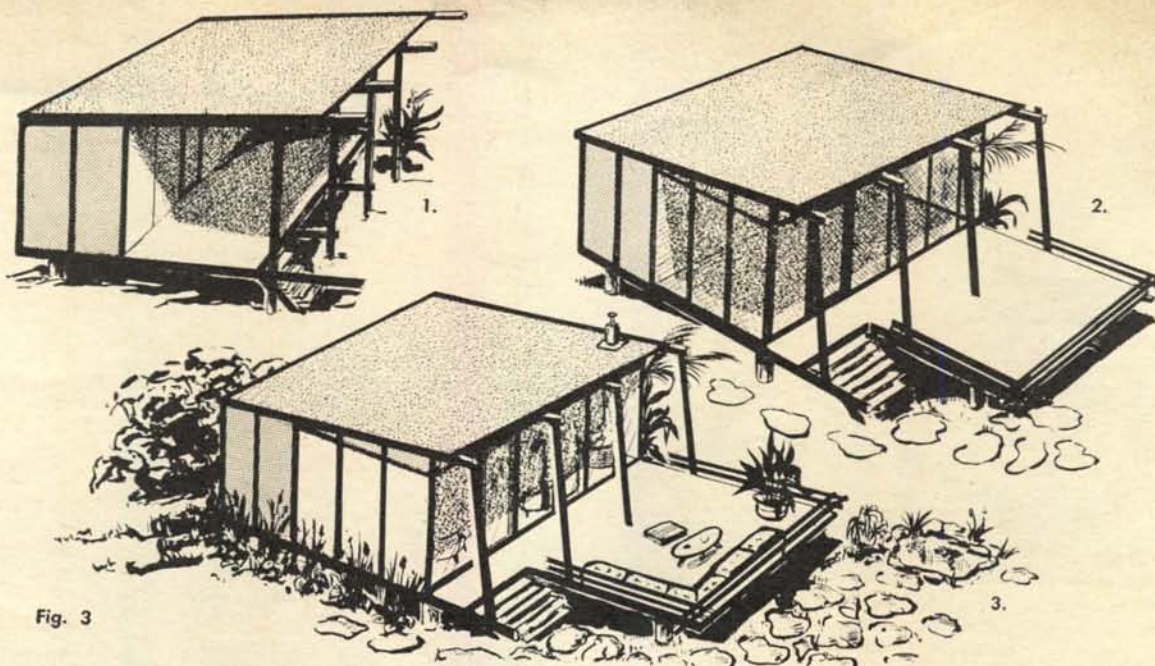


Fig. 3

3. Drawings show three stages of construction for cabin on cover and in Fig. 1, illustrate the excellent design.

easy to build, this A-frame structure makes a fine mountain or beach home. In Fig. 2 is shown a more expansive beach home, constructed in two stages. The building in Fig. 5 is well adapted to woods, beach or mountains. For more information on the pleasure homes, write to: Douglas Fir Plywood Association, Tacoma 2, Wash. △ △

4. Simplicity and strength of ancient A-frame design is adapted to this modern pleasure home, fine for mountain or beach.



5. Graceful design is combined with economy in this handsome, versatile unit that is well adapted to woods, beach or mountains. Materials cost less than \$2,000, and structure can be pre-cut for fast assembly on building site.

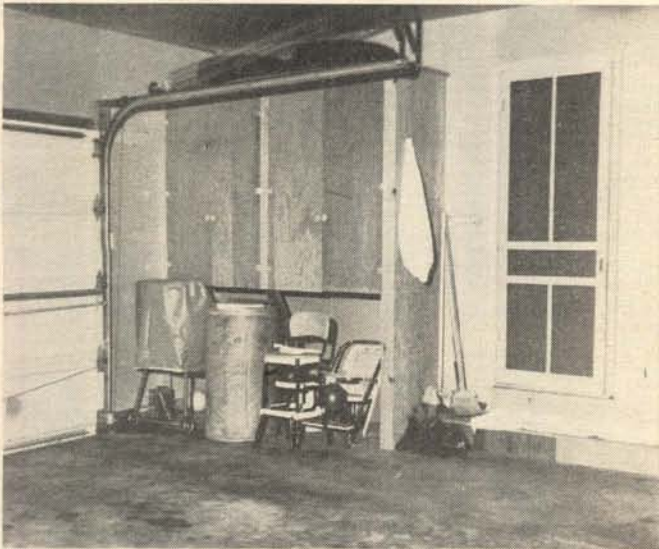


Garage-Library



1. Compare this comfortable corner of the library to Fig. 2, which shows an almost identical garage that retains its original identity. Windows at left in library replaced large garage doors. Window seat is storage, conceals heating ducts.

2. Just a garage, a place to park the car. Plywood cabinets provide some storage for miscellaneous items, space beneath is utilized for portable barbecue, baby carriage, odds and ends. Compare this photo with view in Fig. 1 of library.



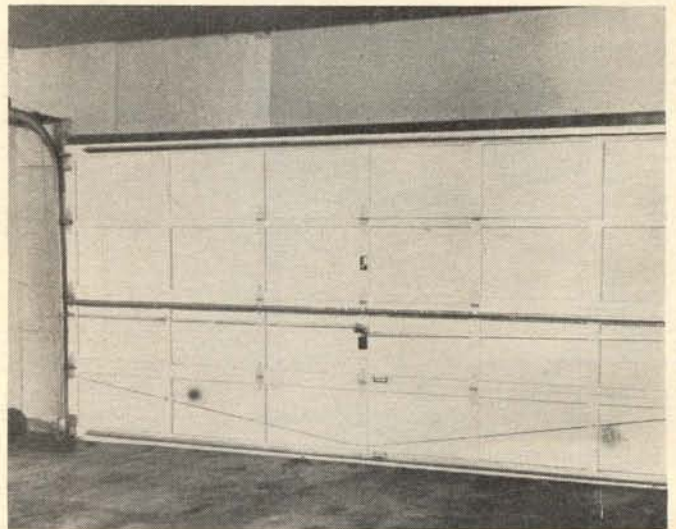
WHEN LOOKING FOR MORE LIVING SPACE in your home, don't overlook an attached garage. Here is an area that already is enclosed and with an exterior that is architecturally designed as part of the original house. The basic steps in converting such a garage to a livable room are to remove the large doors and replace them with framing, sheathing and siding (or brick or masonry, as the case may be), install necessary windows and doors, apply insulation inside the walls, then finish with wallboard, paneling or other material. During construction, of course, wiring and heating ducts or pipes also would have to be installed. In the matter of the floor; if the footings and slab have been insulated from one another, resilient floor tile can be applied directly to the concrete. If the concrete slab is laid directly on the ground, without insulation, there will be a problem in cold climates. Frost will form on the concrete several feet into the room, causing a cold floor, and making it impossible to keep flooring cemented down. Wall materials also will be damaged

3. Another photo of the corner in Fig. 1 shows more clearly how row of windows is used to replace garage doors. Besides providing storage and place for heating ducts, window seat has remote speaker for hi-fi set behind slots at left end.



by the frost from several inches to a foot or more above the floor. On an uninsulated slab, it is best to put in a double floor of wood. That is, a wooden floor nailed to "sleepers," strips of wood fastened to the concrete. A vapor barrier first is placed on the floor, to keep moisture from rising up through the wood. Insulation also may be placed under the floor. The vapor barrier should be extended up the wall about a foot, to protect the insulation in the wall.

For purposes of illustration, two houses in the same neighborhood, almost identical in design, although with differing exterior finishes, are shown. In one



4. Major change in conversion of garage to room is replacement of this large double door with studs, sheathing and siding, (or masonry, depending on exterior construction of home). Door and hardware can be sold to some garage builder.

5. This corner of garage can be compared to finished library in Fig. 6. Stairway to basement in library is not present in this particular garage.

7. Matching windows in library opposite those shown in Figs. 1 and 3 look out over back yard, assure that room has ample cross lighting, cross ventilation.



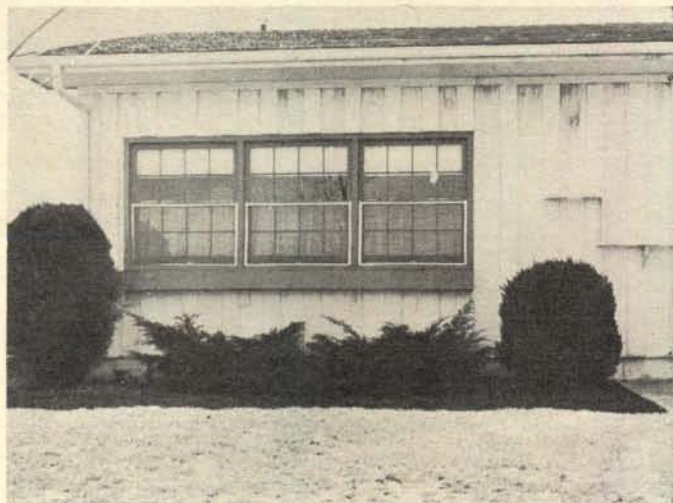
6. Doorway at left leads to rest of house. High step up is typical of attached garages. A built-up, double floor would lower or eliminate problem of the step.

8. Your automobile might appreciate this corner, but it certainly is uninviting when considered as living space. Fig. 7 shows possibilities of this corner.

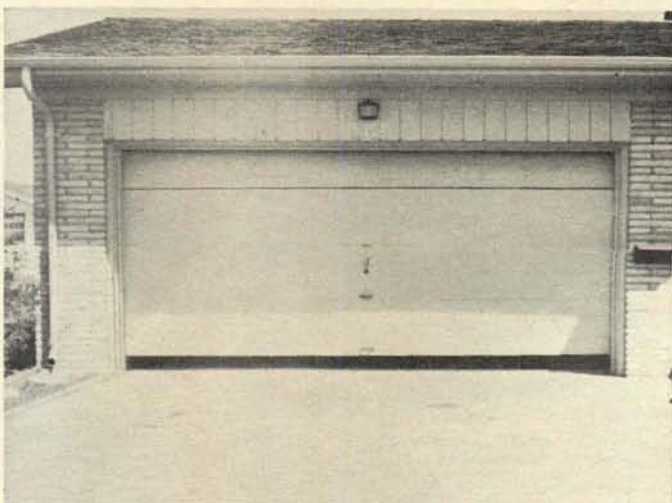
house the garage has been unchanged, Figs. 2, 4, 5, 8 and 10. In the other home the space has been converted to a library and den, Figs. 1, 3, 6, 7 and 9. Because the owner had considered the room conversion before the home was built, he had heating ducts placed in the garage floor during construction. When the change from garage to room was made, it was necessary only to hook them up to the existing heating system. Usually it would be necessary to place the ducts under a double floor or run them above the ceiling. A regular ceiling height can be used, but in the conversion shown it was decided to provide a spacious feeling by using the roof underside as a ceiling. The original ceiling joists were replaced by several beams consisting of three 2 x 8s bolted together, and spaced across the room.

Knotty-pine paneling was used around the walls of the room to a height of 8 ft., wallboard was used above that point. An ingenious and colorful wall covering in this instance was made by using large, brightly colored airline posters. Indirect illumination is provided by ordinary bulbs fitted in sockets screwed to the tops of the ceiling beams, and shielded by 4-sided wooden "fences" that direct the light upward. This lighting is ideal for listening to hi-fi records and casual conversation. Reading and work lights are located where necessary and convenient.

What happens to the car, when the garage becomes living space? A carport is the answer in many cases, located so that it also can be used as a covered patio. Or, the homeowner can build a garage at a later date, when he has finished the garage room. $\triangle\triangle$



9. In this frame home, garage doors have been replaced by a row of windows, studding covered with sheathing and siding. Frame construction, such as this, is easier to handle for do-it-yourselfer who has ordinary woodworking tools.



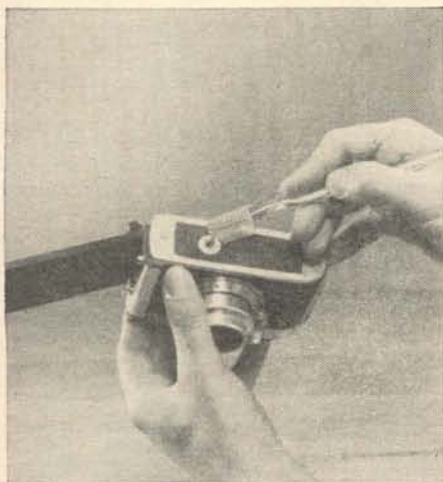
10. This home, of identical design as one shown in Fig. 9, has brick exterior. Replacement of door to change garage into living space would require bricklayer's skill, unless compatible wood pattern, as over door, was used in place of masonry.



1. Inexpensive ear syringe is best tool for blowing dust and foreign matter from cracks and crevices inside a camera housing.

Camera Maintenance and Repair

WARNER BENSON



2. Discarded, soft-bristled toothbrush can be used to clean camera body, brushing dirt and grime from edges and from tripod-screw socket.

MOST OF US HAVE PROBLEMS with our cameras that a little home maintenance will eliminate. If your negatives have dust spots on them, perhaps even larger dirt spots, cleaning the inside of your camera will eliminate them. An inexpensive ear syringe, Fig. 1, can be used to blow dust out of the case, or a soft-bristled camels' hair brush can be used, Fig. 3. For the sake of appearance, and to remove dirt that might find its way to the inside of the case, use a discarded toothbrush, the bristles of which have become soft, Fig. 2. Light streaks on your photos quite often are caused by light reflections from shiny metal surfaces inside the camera. Flat black paint or India ink, Fig. 4, is used to replace the blacking that has worn away. Another source of light leaks, if your camera is the

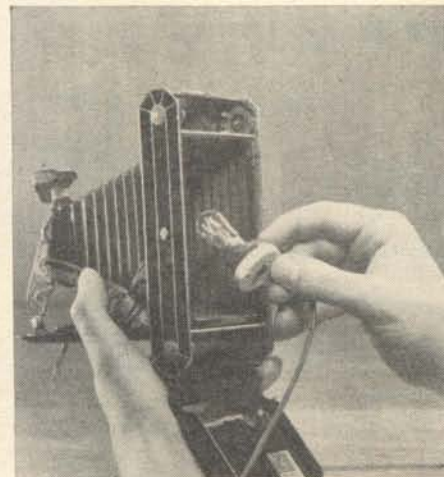
type with bellows, are cracks or pin holes in the material of the bellows. To check for these light leaks, hold a small lamp inside the bellows, with the camera in a fairly dark room, Fig. 5. Any light leaks seen should be sealed with a repair liquid that can be purchased at most camera shops. If there is extensive damage to the bellows, it should be replaced by a camera repairman, or possibly repaired with a special cloth that is cemented over the breaks. In most cases, a bellows that is damaged badly enough to require considerable repairs is best replaced. Serious cracking of the bellows material usually means that it has deteriorated from age and further cracking can be expected. One ordinary precaution that should be observed every time a camera is used is to wipe the



3. Stubborn dust particles and specks of dirt can be brushed from inside camera body with a camel's hair brush; bristles are very soft.



4. Worn metal surfaces on inside of camera should be touched up with flat-black paint or with India ink as shown in this photo.



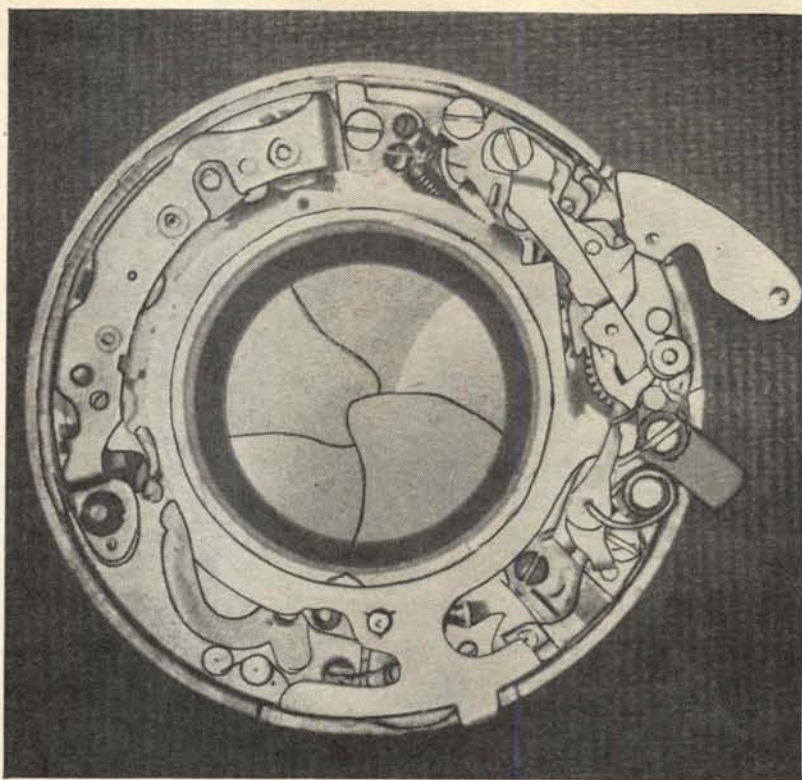
5. Check a camera bellows for light leaks by placing small lamp inside, examining bellows in fairly dark room. Repair damage immediately.

lens to remove dust and any possible fingerprints. Use only a very soft, well-laundered linen handkerchief, or, preferably, lens papers that can be purchased by the packet at camera stores. Under no circumstances should any rough or coarse cloth be used on a lens. Coatings on modern lenses can be scratched, and in some extreme cases, even the glass of the lens can be scratched.

Tinkering with the shutter of even a simple box camera seldom does any good, but if you own a camera with an expensive, fast lens with a between-the-lens shutter, Fig. 6, you are only asking for trouble if you attempt a repair. Shutters of this type are extremely complicated, with a maze of delicate parts inside. A cam-



7. Specialized tools and equipment, plus training in camera work, are needed for the repairing of complicated camera mechanisms.



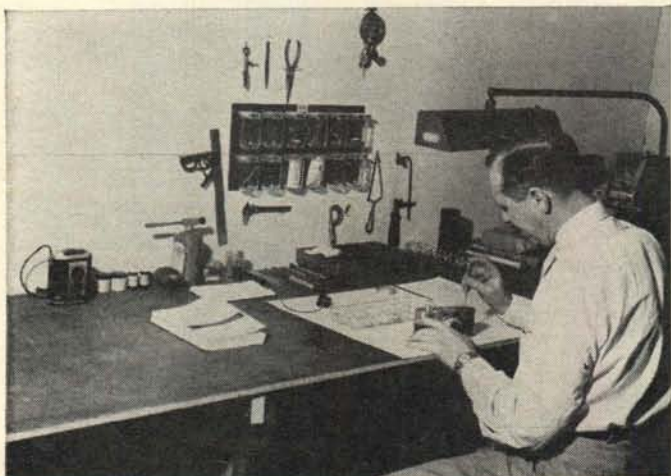
6. If your camera is one of the more expensive types, with a fine lens, possibly having a between-the-lens shutter, do not tinker with it. This photo, from the National Camera Repair School, of a typical modern shutter—the Synchro-Compur—shows the complicated mechanism inside. If you are not a camera repairman, leave it alone.

era repairman uses a jeweler's loupe—a magnifying eyepiece—to see and work on the tiny components that actuate the shutter and control the diaphragm. Also included in the complex of miniature gears, levers and cams are devices that synchronize the shutter with a flash unit. Without specialized training and equipment, it is practically impossible to work on a shutter of this type.

If you have had a camera repaired recently you know that there are not too many repairmen, and that they are so loaded with work that it takes quite a long time for you to have your camera work done. This would indicate—and does—that camera repair-

men are in demand. Furthermore the demand for these skilled craftsmen increases every day. How do you go about getting training in this field? There are two ways; one is to attend a resident school,—that is, you attend classes in their buildings,—the other is to take a home-study course from a correspondence school.

The Germain School of Photography in New York City, Figs. 9 through 11, is a resident school. The course runs three months for day classes, or one year for night classes. Most of the students are mature men past 40 who wish to get into a less-active field, and who enjoy working with their hands. Eight of nine students of



8. Camera-repair work requires meticulous craftsmanship, but all units handled are small and light, very little power equipment is needed. A corner of your workshop, or even of a den or study, can be used.



9. One of the advantages of a resident school, as here at the Germain School, is that equipment is always available, as is a complete stock of parts. A teacher is always handy for personal attention.

a recent graduation class were working as camera repairmen within a month of leaving school. On the same level as the Germain school is the National Camera Repair School in Englewood, Colorado, Figs. 6 through 8, which offers an excellent correspondence course in camera repair.

The Agricultural and Technical Institute, Farmingdale, New York, Figs. 12 through 14, a division of the State University of New York, offers the only course in "Photographic Equipment Technology" in the U.S. This is a comparatively new course to provide trained technicians now urgently needed for the installation, servicing, testing and maintenance of photographic equipment, and for the management and operation of photographic-service organizations. Graduates of this two-year residence course are qualified to repair cameras, but are generally looking to wider fields. A notch above the Farmingdale school is the Rochester In-

stitute of Technology that offers two majors in its Department of Photography: photographic science and professional-illustrative photography. The student may take either two or four year courses. The two-year course leads to a degree of Associate in Applied Science, and the four-year course to a degree of Bachelor of Science. Graduates of the two-year course are employed generally as technicians or laboratory assistants, those of the four-year course as senior technicians, group leaders and Photo-Equipment engineers.

While it will be difficult for the average person to attend a resident school, correspondence schools can give you the training. Home-study courses put the burden of keeping up with studies on the individual himself, but if he truly wants to learn, this presents no problem. Almost any skill can, and has been, learned through a home-study course. Camera repair is no exception. $\Delta \Delta$



10. Another view of the Germain School shows more of the extensive equipment and classroom area. Lathe is not home-shop equipment.



11. Student at Germain School gets personal attention from teacher, starting with simple camera they are examining, to more complicated units.



12. Student at Technical Institute at Farmingdale, N. Y., checks the synchronization of a movie projector with an oscilloscope.



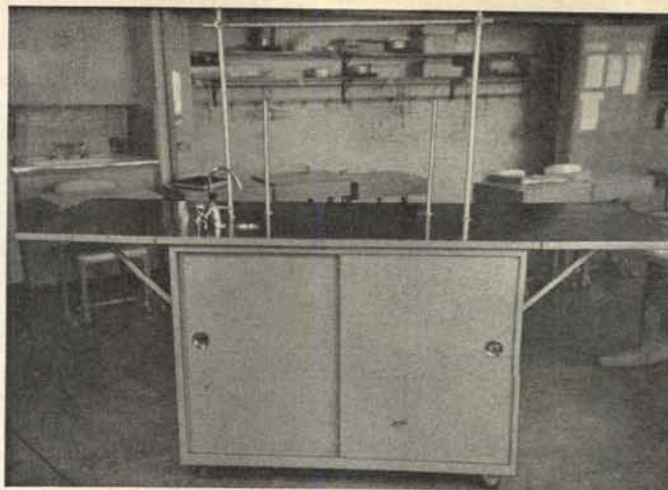
13. Here students at Farmingdale are working out optical problems, part of training in understanding the functions of various types of camera lenses, and learning the mathematics involved.



14. Magnifying eyepiece (jeweler's loupe) is necessary for work on camera equipment.



1. Distillation of water is being demonstrated on the science table, with explanations by the teacher. Note that when the leaves are up the table is almost 6 ft. long, permitting fairly large group to gather around.



2. This close-up of the table shows neat appearance provided by removable sliding doors. Pump, sink and gas valve are located at end of table top to reduce wasted top space. Plastic laminate is on top and leaves.

PORTABLE Science Table

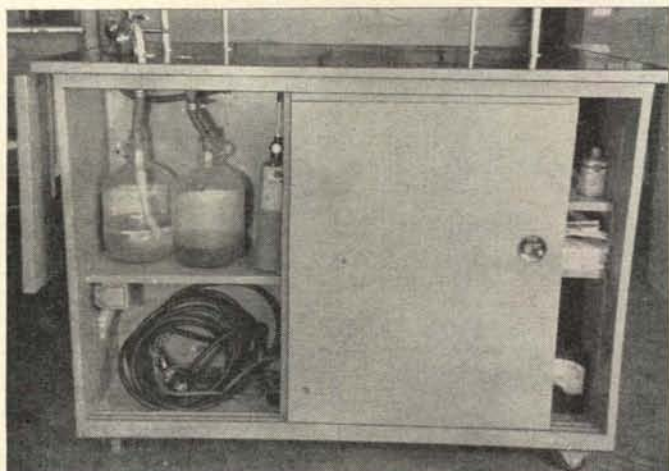
FRED STEBBINS

TEACHING SCIENCE IN OUR SCHOOLS has become more and more important in this "space age," but lack of money and lack of space are restricting this important function in many schools. The portable science table described in this article was designed and built to overcome these problems. Because the unit is completely portable, it can be wheeled from room to room, making it possible to set up a science class in any room that is available. This eliminates the need for having one room restricted to the teaching of science alone. This

solves the space problem; how about cost? A manufactured unit comparable to the unit described will cost at least \$700.00; this unit costs approximately \$150.00. While very few parent-teacher organizations could pledge themselves to the higher amount, most could work out a method for producing the smaller figure. The lower cost also requires that home craftsmen in the organization build the table. The original table was built in two weeks' time by an individual. Several men working together could get the job done

even more quickly.

If even the \$150.00 would be too much, the design of the table can be simplified. Electricity, gas, water, even the cabinet drawers and doors can be considered as optional accessories and added later as money is available. Dimensions of the model shown can be reduced to produce a smaller table, and one that will cost less, but the original is similar in size to commercial models and has proven entirely satisfactory in several years of use. Smaller tables present the problem of providing less



3. With sliding doors open, water and waste bottles, propane-gas tank and electrical extension cord are seen on left side. Shelf on that side is fixed, shelves on right side are adjustable to various heights.



4. Opposite side of table has two drawers, with storage cabinet below. Shelf is notched to allow for test-tube storage on doors. Left door has rack for clean tubes, rack on righthand door holds prepared liquids.

CONSTRUCTION NOTE:
DOORS, DRAWER FRONTS,
DIVIDERS, SHELVES,
CABINET WALLS AND BASE
ARE $\frac{3}{4}$ " FIR PLYWOOD
SCREWED AND GLUED.
TOP IS 1" PLYWOOD.
PLYWOOD IS
"AD" GRADE.

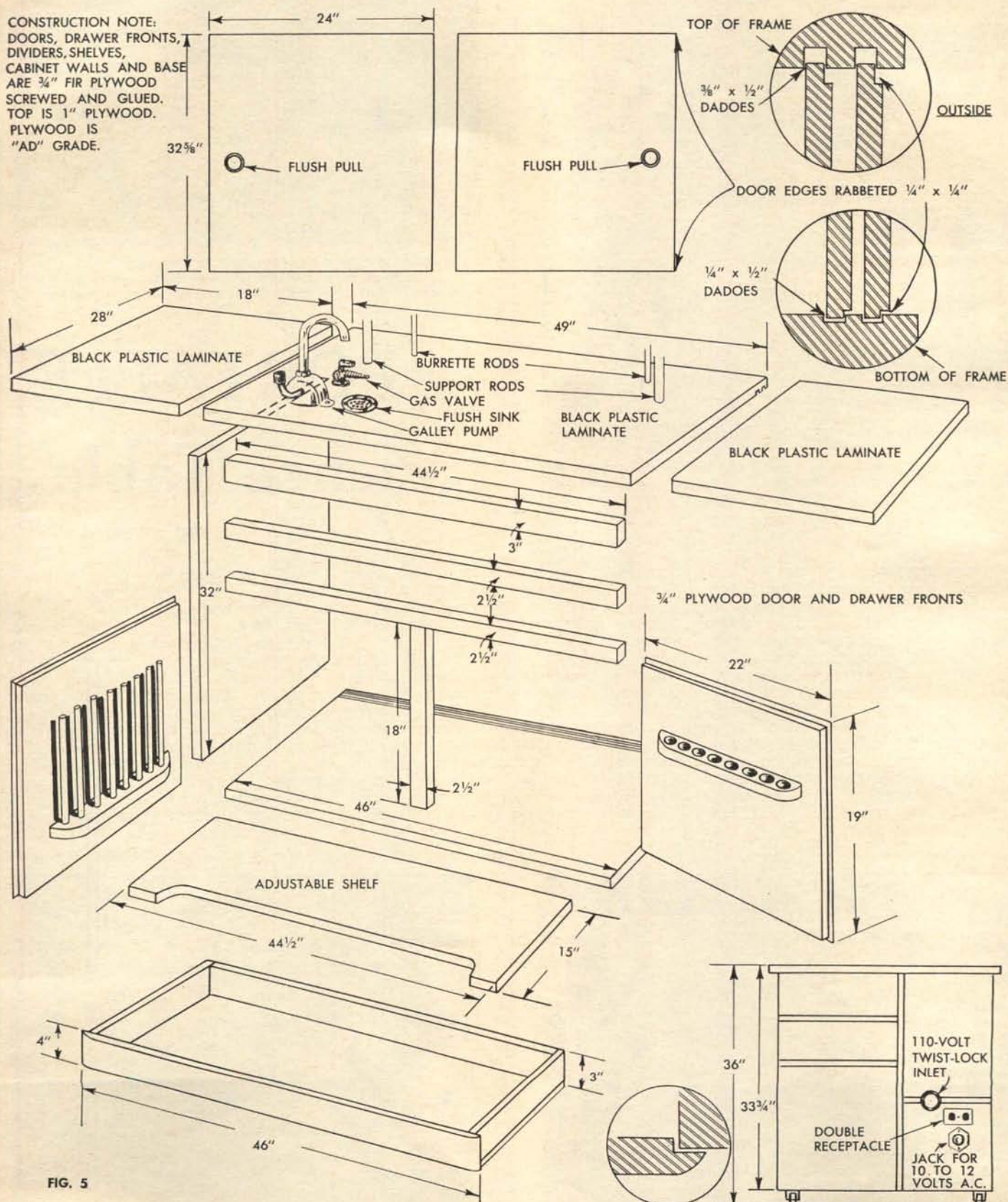


FIG. 5



6. Shown are rocker-arm (galley-type) pump, gas valve and flush sink. All metal parts are chrome-plated brass except for aluminum rods.

space for viewing by the pupils. If economy is a factor, it is better to eliminate some of the accessories, but keep the table to the full size as described and dimensioned.

All parts for the science table can be obtained at either a lumberyard or hardware store, with the exception of the rocker-arm pump and the aluminum rods. The pump, also called a "galley pump," is the type used in the galleys of boats and in the kitchens of some house trailers. They can be purchased from a manufacturer of trailers, or possibly from a local trailer sales and service agency. The pump and sink (strainer) for the original were obtained from Trailer Parts Supply, 1001 East Central, Wichita, Kans. The pump is stock No. 444, the strainer is No. S-1152, with tail piece No. DS-6.

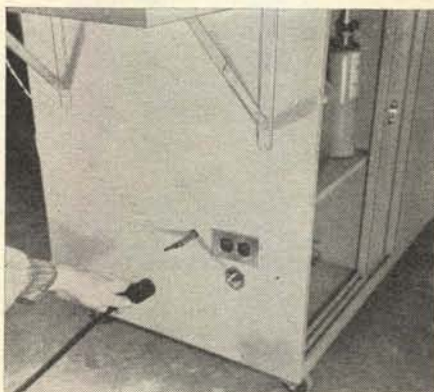
The flush plates into which the duraluminum rods are screwed, as well as the support and burrette rods and fittings were obtained from Kewaunee Mfg. Co., Adrian, Mich. Following are the quantity and stock number of the required fittings: Two No. 548 flush plates, two No. 550 clamps with screws, two No. 553 support rods, one No. 557 cross bar, two No. 547 flush plates, two No. 551 burrette rods. Total cost of the pump, sink, rods and fittings is about \$40.00. Black plastic laminate (Formica, Micarta, etc.) is used for the table top and the tops of the leaves. This material is cleaned easily, and the dark color shows dirt immediately, assuring that the table is kept constantly clean.

Propane gas is supplied by a tank and valve of the type ordinarily used for soldering and brazing. A rubber tube from the valve is connected to the gas valve on the table top. Adjustable-shelf hardware, available at building-supply dealers and lumberyards, is used for installing the adjustable shelves on one side of the cabinet beneath the table.

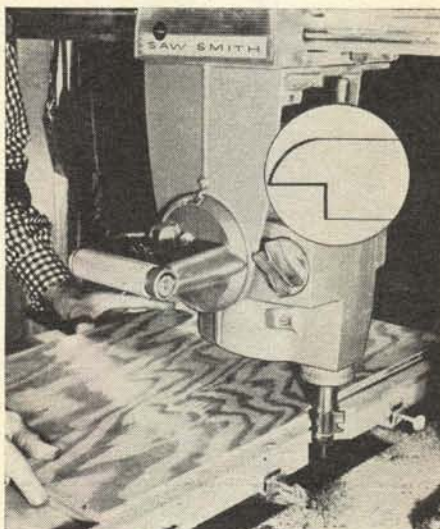
Electricity for the 110-volt receptacles is supplied by a heavy-duty extension cord. It is fitted with a twist-lock connector to turn into a mating receptacle in one end of the

table cabinet. The twist-lock fitting will not pull out, should the table be moved beyond the length of the extension cord, but the plug in the wall receptacle will pull out, disconnecting the electricity from the table. An ordinary doorbell transformer is positioned in the same end of the cabinet as the receptacle, and is wired to a phone jack. The transformer steps down the 110-volt current to 10 to 12 volts.

Various schools, and different teachers will have other devices and supplies that they will consider more necessary than some shown. Each table built will, in effect, be a custom model, tailored to fit the particular needs of a certain class, age group and school. And it will help teach our youngsters the age-old physical sciences that must be understood in this space age. Δ Δ



7. Twist-lock fitting connects extension to table. Double receptacle then provides 110 volts, phone jack at left of receptacle provides 10 to 12 volts.



8. Lips for cabinet doors, and drawer fronts, are cut easily with shaper cutter. Here SawSmith is used as shaper. Fence is two lengths of scrap stock. Large table on saw makes this simple operation of sliding stock along against cutter, making front edge and rabbet.

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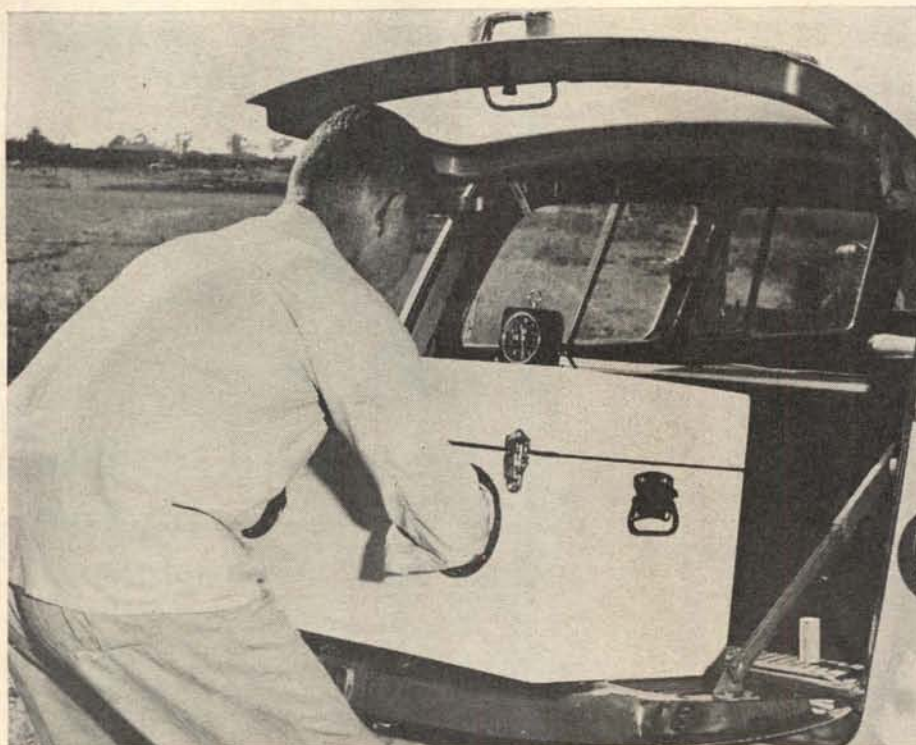
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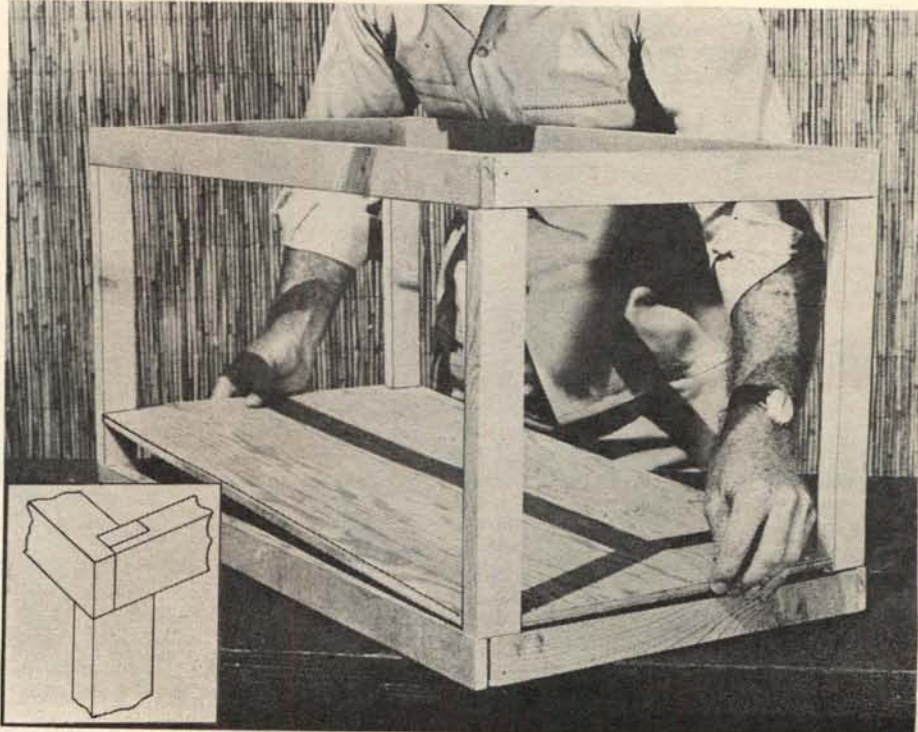
PORTABLE DARKROOM



1. On field trips the portable darkroom really proves its value. In this instance film is being processed, the clock being placed on top of the cabinet to permit keeping track of time. Note the light gray color of the cabinet, which reflects heat and light.

DESIGNED ORIGINALLY for field trips to permit processing film on the spot, Fig. 1, this portable darkroom might also be the answer in a small home where there is no space for a permanent darkroom. While the size of the unit can be varied to suit a particular situation, it is not likely that it need be larger. The darkroom shown handles a 4 x 5-in. press camera, a twin-lens reflex and a 35 mm camera, with necessary equipment, Fig. 8. Basically the unit is a frame of 1 x 2 stock, Fig. 2, covered with $\frac{3}{8}$ -in. plywood. The floor of the cabinet is attached to the top of the frame members, Fig. 2, so that the floor is clear of obstructions. Sheet plastic with its own contact adhesive is applied to the floor and an inch or so up the sides to provide a water-tight, easily cleaned surface, Fig. 8. The box that forms the cabinet is assembled completely, with the front panel attached temporarily. Next, the box is run over a table saw and cut apart 4 in. from the top, Fig. 3. This assures an accurate fit between top and lid of the cabinet. A frame of 1 x 2 stock is glued and screwed to the upper edge of the lower part of the cabinet and allowed to project to form a $\frac{3}{8}$ -in. flange. A sponge-rubber gasket (the material is obtainable in 10-ft. lengths at auto-supply stores) is

2. Frame for the portable darkroom is cut from 1 x 2 stock, corners being joined by a modified half-lap joint, as shown in the inset. Floor is glued and screwed to top of frame members, keeping floor area uncluttered and clear.



LAWRENCE L. TOOLIN

fitted against the flange, Fig. 7, to form a light and dust-tight seal. The front of the cabinet is removed and two holes 5 in. in diameter are cut. Black, opaque material, such as sateen, is cut in strips 8 in. wide, and of a convenient length for your arms, and sewn to form tubes with double "walls." One end is cut to "bell out," Fig. 4, so that it can be glued to the edge of the hole. Stove-pipe flanges then are punched and screwed over the cloth and to the cabinet, Fig. 5. The front panel now is installed, Fig. 6, and hinges, suitcase fasteners and lifting handles attached. The inside of the cabinet is painted flat black, and strips of elastic are stapled or tacked to the inside of the lid and cabinet to hold equipment and accessories, Fig. 8.

MATERIAL LIST

$\frac{3}{8}$ -in. Plywood

Front and Back Panels, $16\frac{1}{4}$ " x $30\frac{3}{4}$ "

End Panels, $16\frac{1}{4}$ " x $16\frac{3}{8}$ "

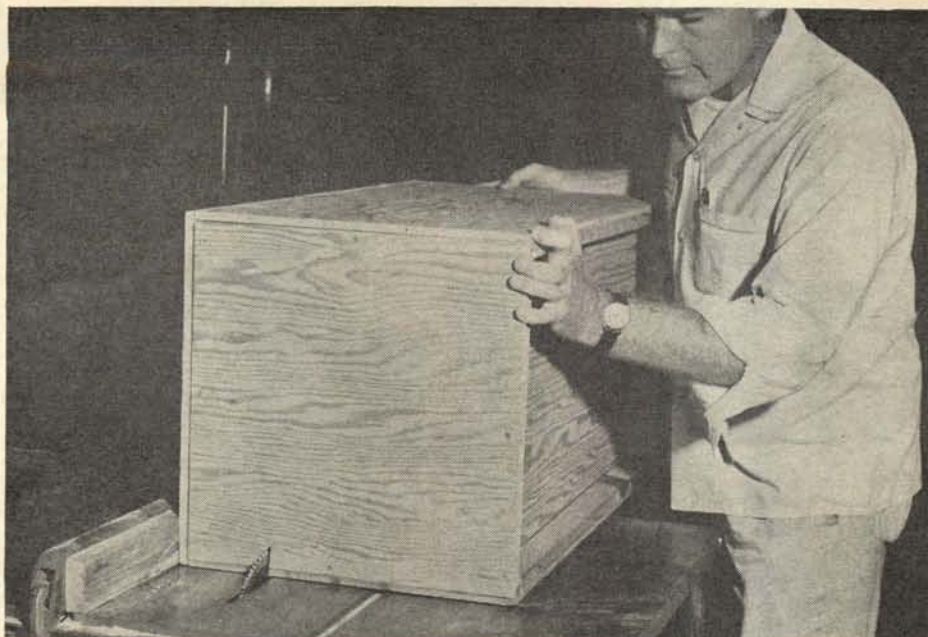
Top Panel, $16\frac{3}{4}$ " x $30\frac{3}{4}$ "

Bottom Panel, 16" x 30"

1 x 2 Pine

6 pieces 30"

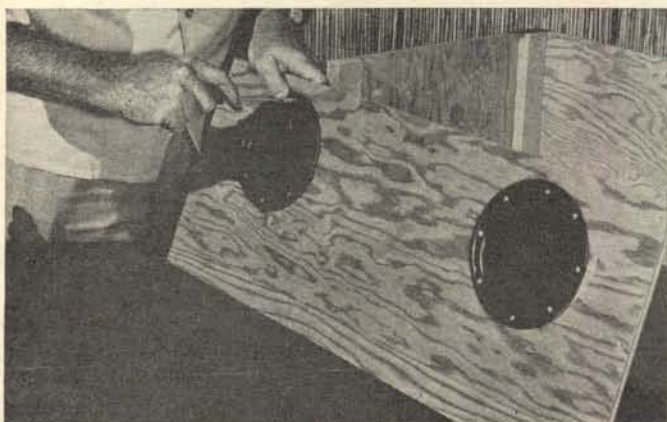
16 pieces 16"



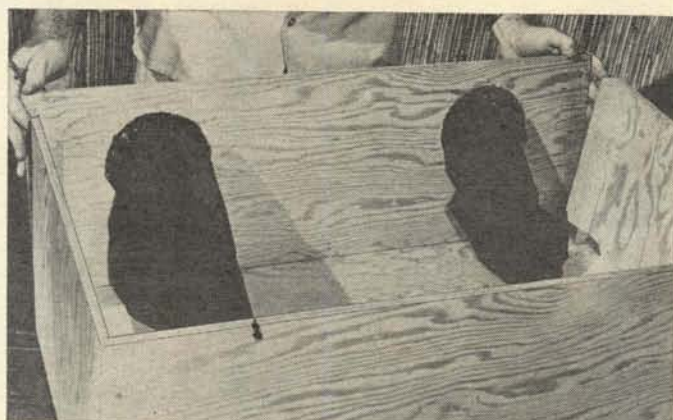
3. After box is assembled, it is run over table saw and cut apart to assure that lid fits box exactly.



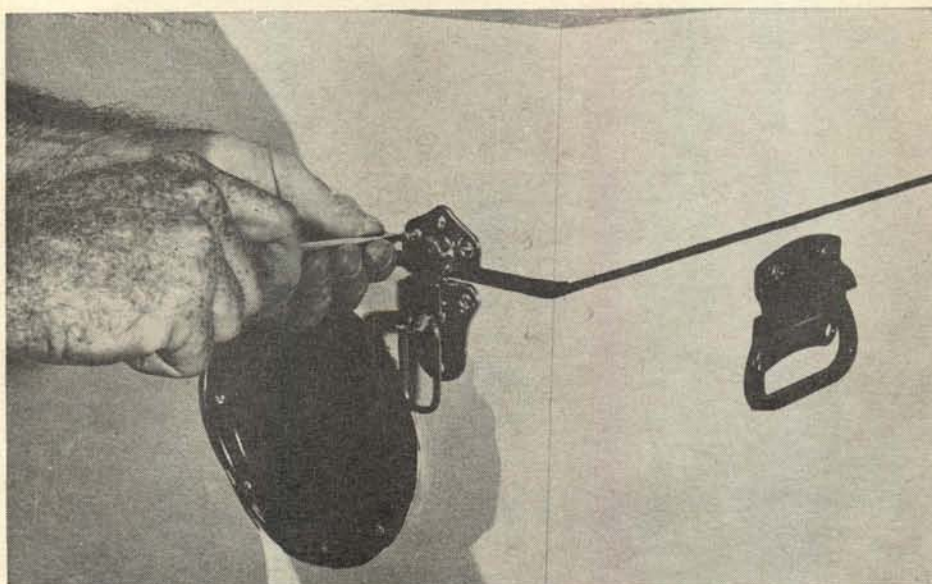
4. Four thicknesses of opaque, black fabric, such as sateen, are sewn to make each sleeve. Result is double-walled tube. One end is made wide, as indicated, to produce "bell-mouth," the other end has elastic band to grip arm.



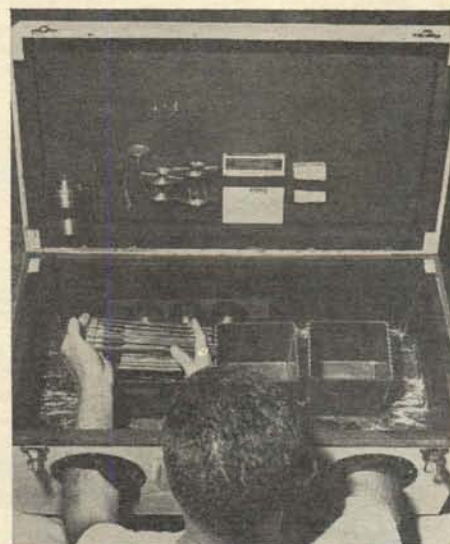
5. Bell-mouth, or flare, of each sleeve is glued to opening cut in front of cabinet, then stove-pipe flange is punched or drilled to accommodate wood screws that are driven through the cloth and into the wood.



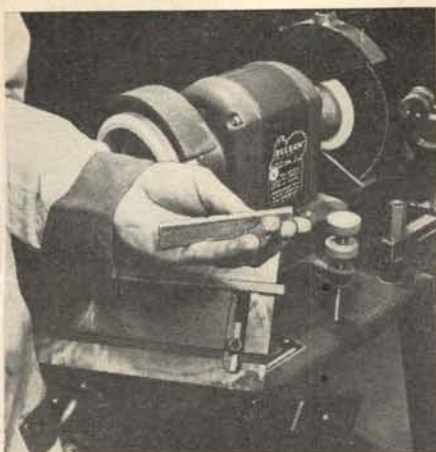
6. After sleeves have been attached, front panel of cabinet is fastened in place with glue and screws. Note that sleeves are long enough to fold, so that if arms are withdrawn, light-sensitive materials will be protected.



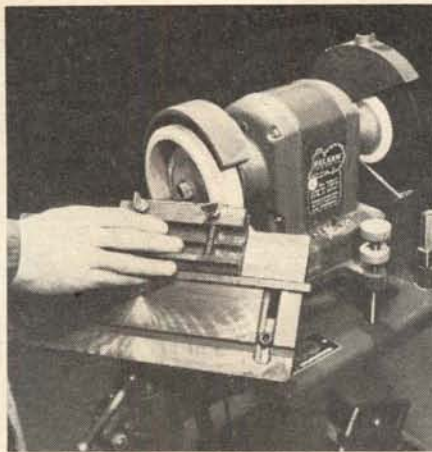
7. The lid of the cabinet is held down firmly on the sponge-rubber gasket by suitcase latches that are screwed to the lid and cabinet as shown. Heavy-duty handles are attached at each end of the darkroom cabinet to permit two persons to lift the unit in and out of a car when it is fully loaded.



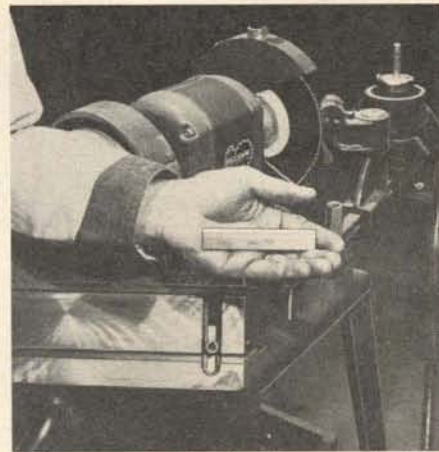
8. Shown here is method of processing sheet film in open tanks. Waterproof plastic on bottom of cabinet has its own contact adhesive.



1. After a bout with some extremely resinous wood, all three planer knives looked like this. The Belsaw Sharpener not only puts on a keen edge, but keeps each knife identical in size.

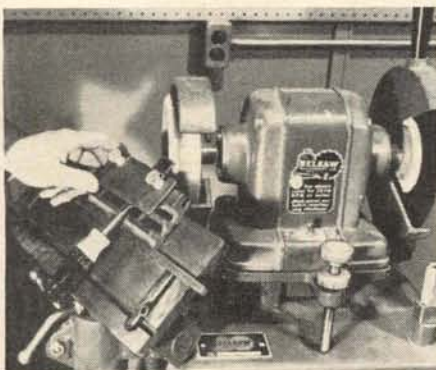


2. Each of the three planer knives is set up in this fixture and sharpened. Because each knife is sharpened the same, each is the same size, simplifying the adjustment of the planer head.



3. Sharper than when brand new, each of the knives now has a razor-sharp, hollow-ground edge. The job takes only a few moments per blade when done on the Belsaw Sharpener.

SAW FILERS AND TOOL SHARPENERS



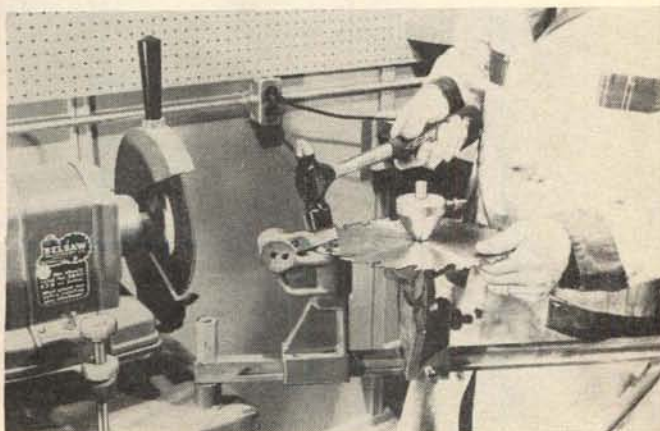
4. Sharpening wood chisels is just as simple as putting keen edges on planer knives. Also, because every edge is hollow ground, it will last much longer, stay sharper than a straight bevel.

TWO TOOLS USED EXTENSIVELY in our Model Shop are the Foley Saw Filer and the Belsaw Tool Sharpener. We have a lot of saw blades to keep sharp, as well as a goodly number of tools with cutting edges. We do not, of course, recommend that every shop have these units, but our experience bears out the fact that there are tools in every shop, both home and professional, that need frequent sharpening. If you are looking for a way to make extra money in your spare time, or are retired and want a full-time job that will utilize your home workshop, it will pay you to investigate these machines.

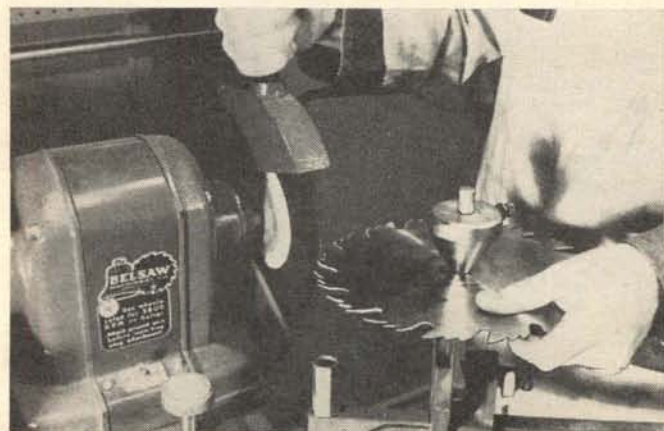
The Belsaw Sharpener, Figs. 1 through 6, consists basically of a

double-end grinder, pivoted so it can be rocked from back to front. On one end of the grinder is a hollow-formed wheel that is used for tool sharpening. Positioned beside the wheel is a table that can be raised, lowered, rotated 360 deg. and adjusted to any desired angle. Grooves in the table receive a length of square steel against which various jigs and fixtures are held and moved, Figs. 2 and 4. Planer blades, plane irons, wood and cold chisels, paper-cutter blades, even ice skates can be sharpened. Every job finishes with a hollow-ground edge. A light touch on an oil stone removes any burr to produce a razor edge.

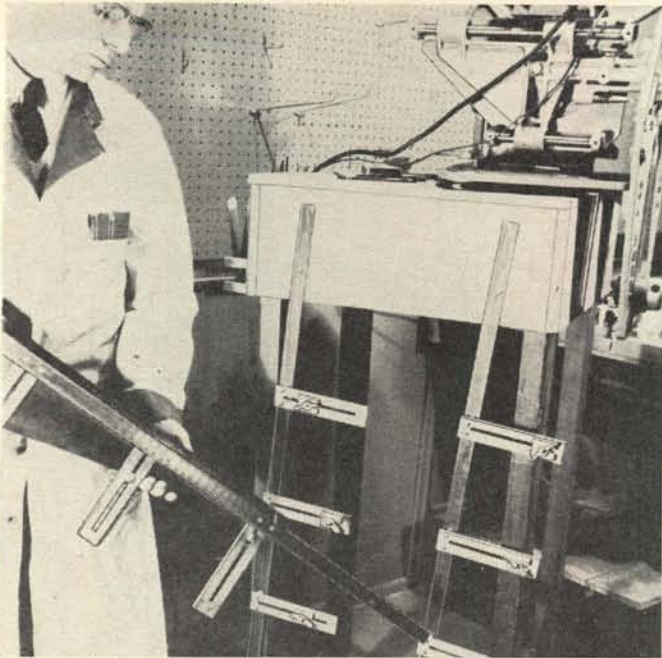
At the opposite end of the Belsaw



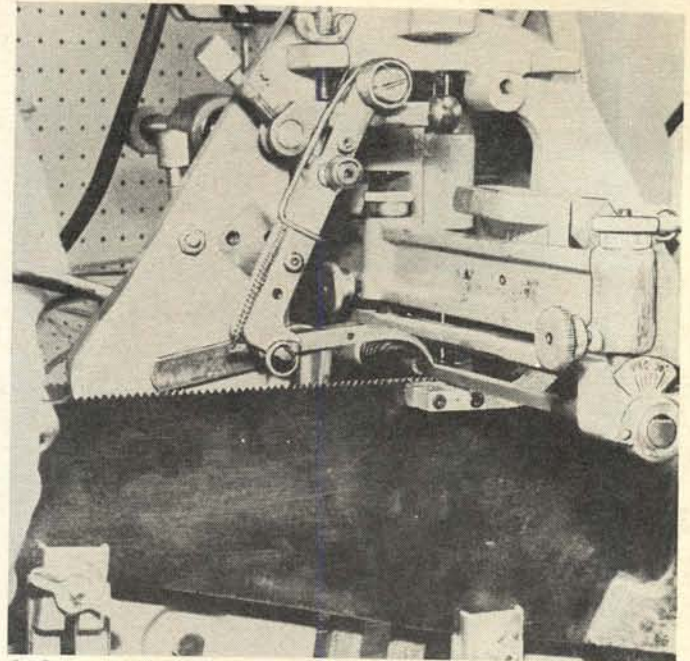
5. A light hammer blow puts the set in circular saws sharpened on the Belsaw unit, with this attachment. When alternate teeth have been set on one side, blade simply is turned over and replaced on attachment.



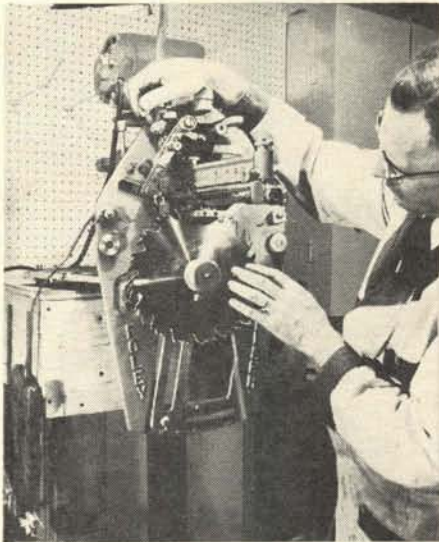
6. Circular saws are sharpened on Belsaw unit with wheel that is shaped to fit the particular style of tooth being ground. Saw blade is held solid, but rotated, and wheel is pulled against it to determined depth.



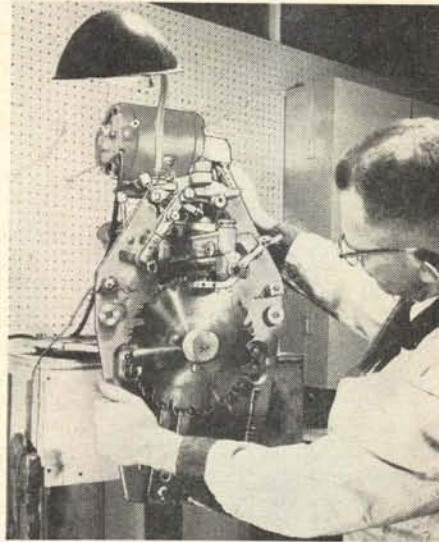
7. Three fixtures are used with Foley Filer for hand saws. One holds straight-edge saws, another is for curved-edge saws, the third is for back saws. The latter allows for thickness of back, keeps blade vertical.



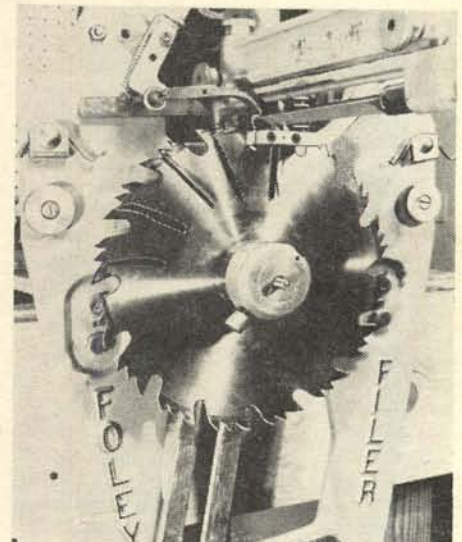
8. Once saw blade is set, Foley Filer automatically advances the blade one tooth at a time as file is drawn across each tooth. Unit is completely adjustable for depth of cut, angle of tooth, number of teeth per inch.



9. For combination blade, Foley unit is adjusted to file No. 1 tooth in each group, then moved to file No. 2 tooth, etc. Filing is fast and accurate. Blade is sharp in minutes.



10. Knob on drive wheel permits turning Foley unit by hand to double-check all adjustments. After a few turns motor is turned on and Filer does all the work for you.



11. In this shot, No. 1 tooth in each group of teeth on combination blade has been marked to show how unit "skip-files" on this type blade, by-passing notches.

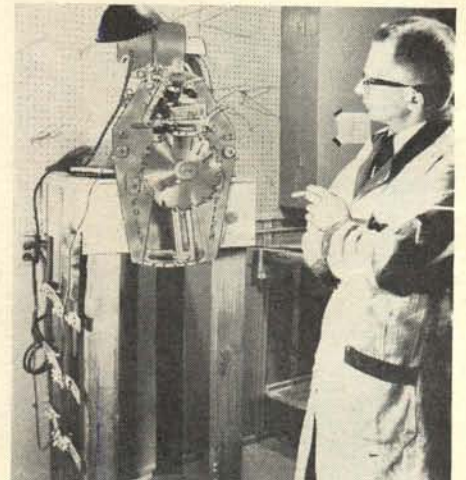
unit are fitted thin grinding wheels for sharpening circular saws. The edges of the wheels are shaped with a wheel dresser to conform to the shape of the teeth of the saw blade being sharpened. The blade is fitted in a fixture, Fig. 6, and rotated by hand, while the motor is rocked into and away from the blade, grinding each tooth the same size and depth. An attachment on the unit permits setting the teeth, Fig. 5.

Our Foley Filer, Figs. 7 through 12, will sharpen both straight hand-saws and circular saws. The machine uses various sizes of files to sharpen saw teeth, and once the machine has been properly adjusted, filing is done completely automatically, Fig. 12.

For straight saws there are three fixtures into which the blades are clamped. One fixture is for straight-edge saws, one is for curved-edge and the other is for back saws. An off-set in the latter fixture allows for the thickness of the back, keeping the blade vertically against the file.

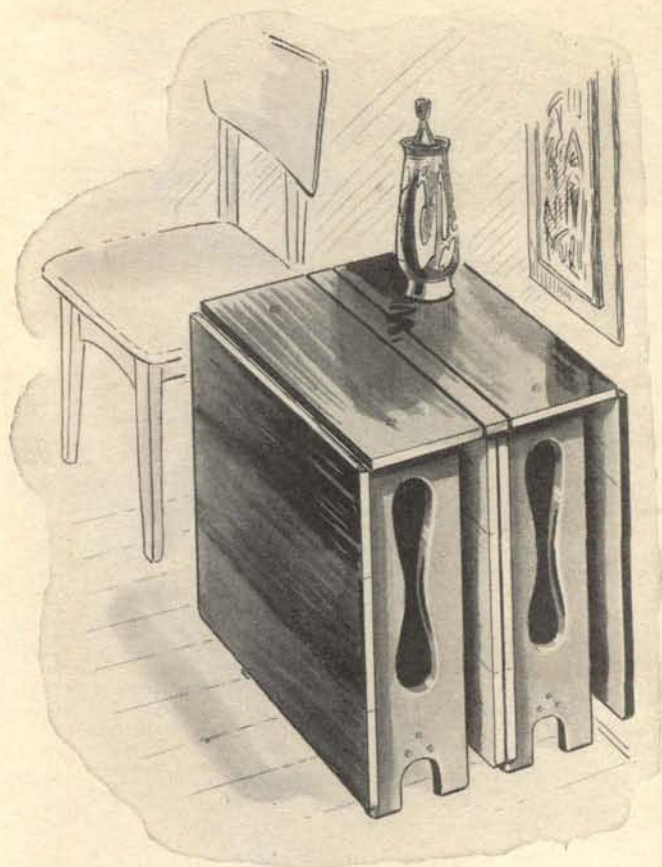
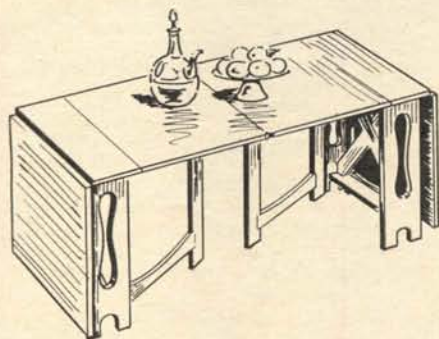
Even craftsmen who keep their tools touched up frequently need them sharpened thoroughly once or twice a year. A Foley Filer or Bel-saw Sharpener does that job. $\Delta \Delta$

12. Picture of a man filing a saw blade. Our experience in Model Shop is that circular blades are more easily sharpened than straight blades, of course need sharpening more often.



Expandable Table

ROBERTA FAIRALL



DESIGNED ESPECIALLY FOR WORKBENCH readers, this contemporary dining-room table solves many of the problems caused by the small dining areas in many modern homes. When closed, the table takes up a space only 20 x 36 in., yet will open to accommodate 10 or 12 people. The versatile design permits the table to be opened to seat any number of persons from two to capacity, as illustrated by the sketches.

Construction is kept simple and either surfaced hardwood solid stock or plywood can be used. If solid stock is used, the table leaves will have to be glued up of several pieces. Drive several 8d nails into the edges of each piece of stock, then cut off the heads and file the nails to points. Apply glue to the

edges of the board, then tap them together with a mallet. The nails will keep the boards aligned and together until the glue has set.

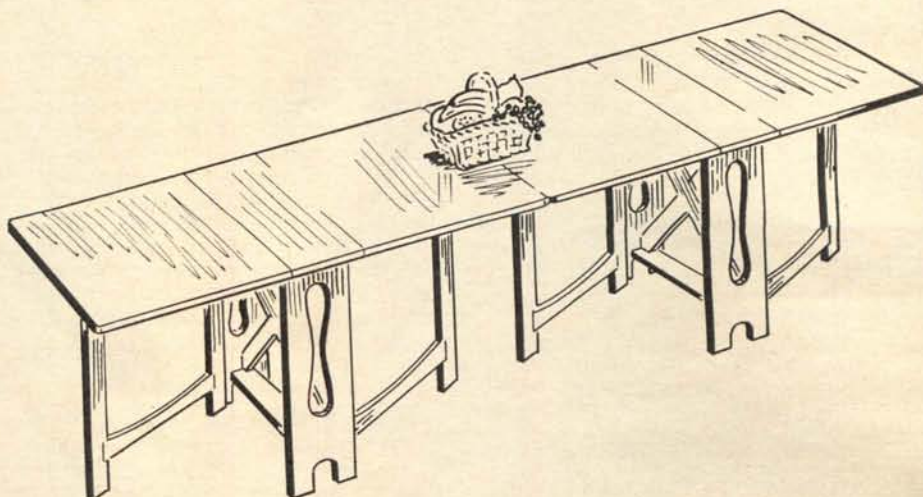
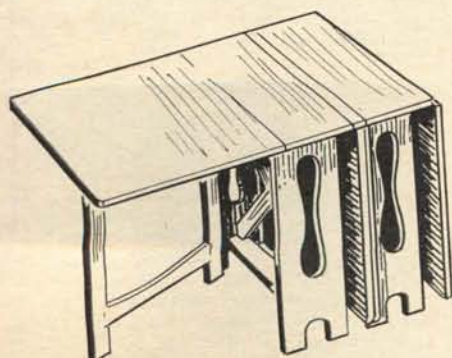
If plywood is used, finish all edges with veneer tape to provide the appearance of solid stock. Various types of hardwood-faced plywood are available, giving you a choice of finishes.

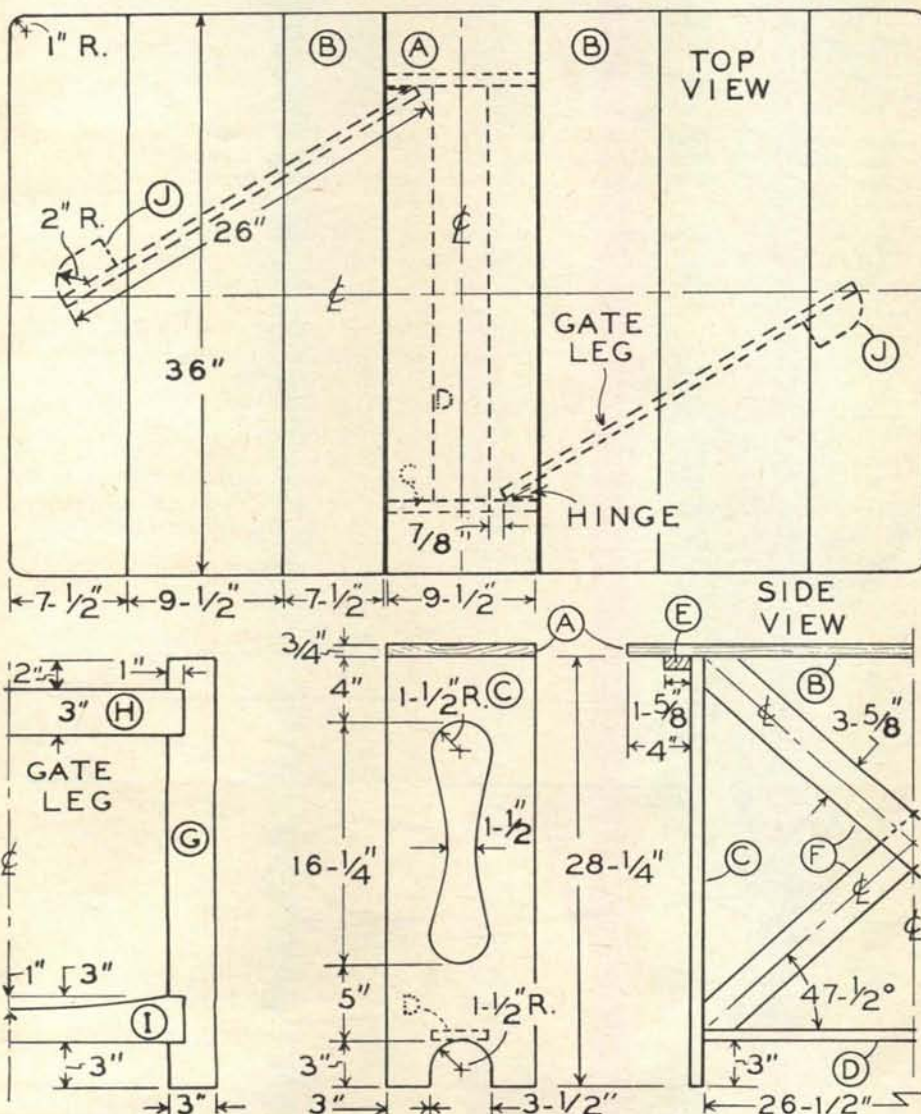
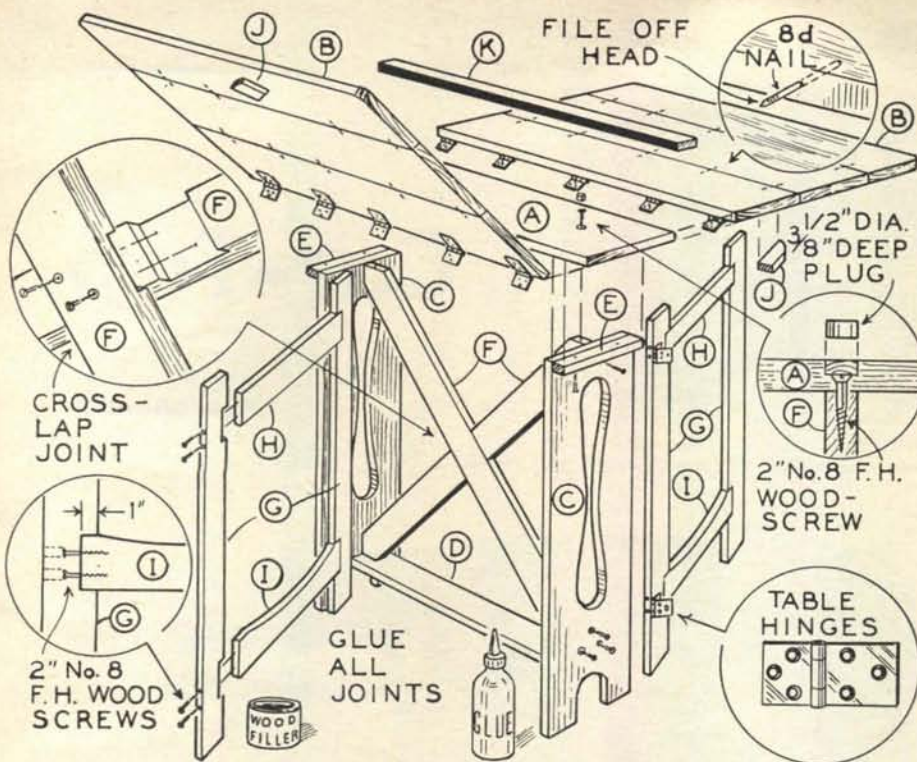
Lengths of hardwood dowel are used to plug the counterbored holes for the wood screws used in the center section of the table. Depending on personal preference, the table—actually two gate-leg tables—can be built as two separate units, or the center leaves can be hinged together. A filler strip 1½ in. wide is used between the tables when the units are pushed together.

Either 1-in. solid stock (finished dimension approx. ¾ in.) or ¾-in. plywood is used throughout.

Material List for each Table Unit (2 required):

- A-Top, 9½" x 36", 1 required.
- B-Leaves, 24½" x 36", 2 required.
- C-Legs, 9½" x 28¼", 2 required.
- D-Stretcher, 3½" x 26½", 1 required.
- E-Blocks, 15½" x 9½", 2 required.
- F-Cross-braces, 3½" x 36", 2 required.
- G-Stiles for gate legs, 3" x 28¼", 4 required.
- H-Upper rails for gate legs, 3" x 22", 2 required.
- I-Lower rails for gate legs, 3" x 22", 2 required.
- J-Stops, 2" x 4", 2 required.
- K-Filler strip, 1½" x 36", 1 required, when tables are folded and set together. △ △





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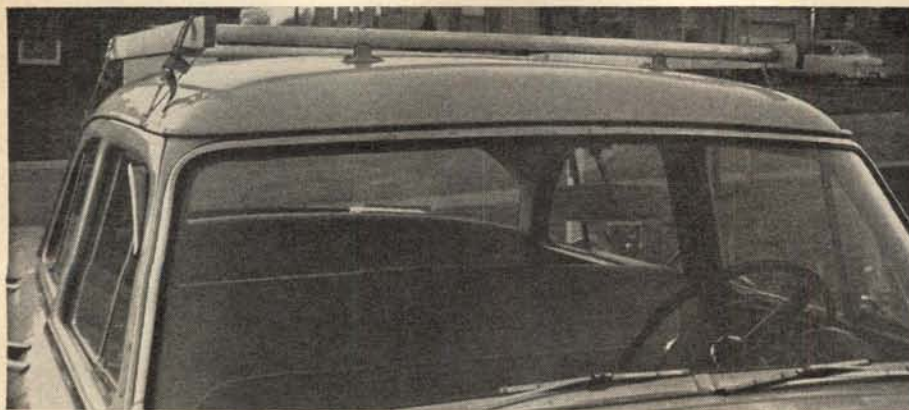
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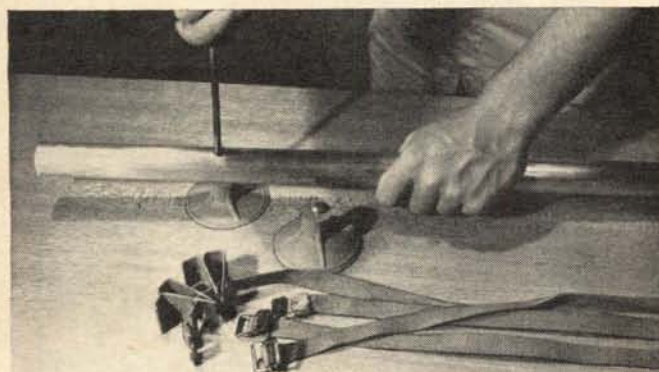
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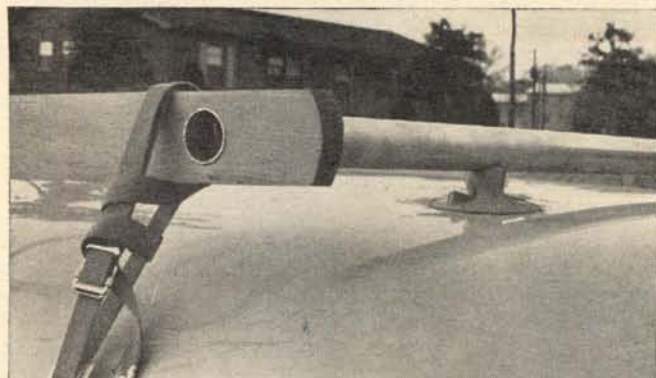
Car-Top

NED CHARLES

Neat and unobtrusive, this car-top carrier is a do-it-yourselfer's best friend when he makes those weekend excursions to the local lumberyard or building-supply dealer. Plywood sheets, lengths of 2 x 4 and 4 x 4, fit easily.



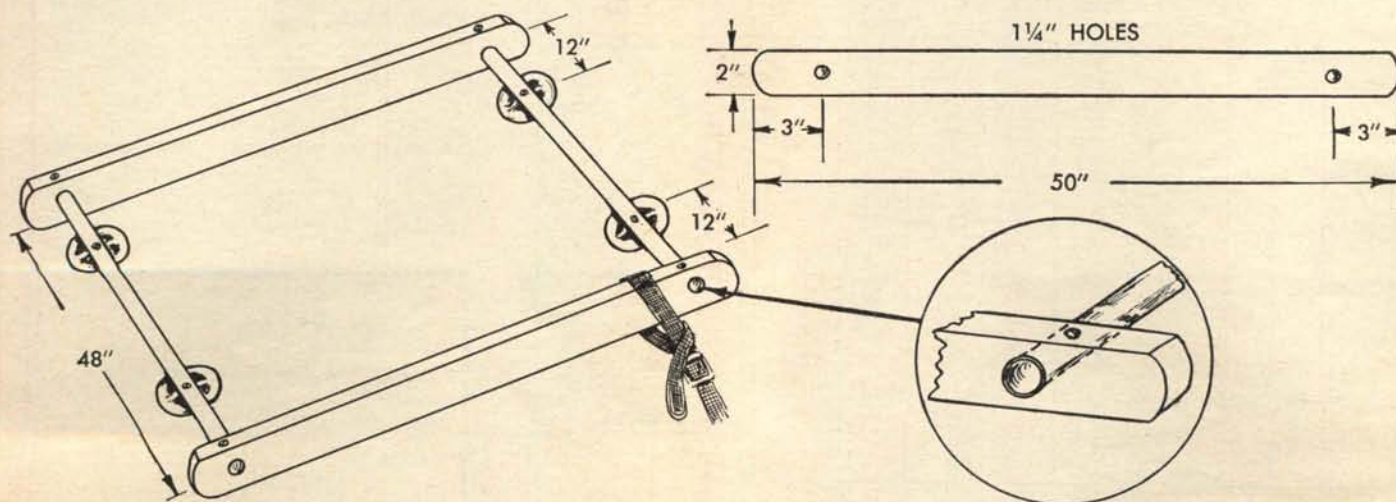
Small holes are drilled through aluminum tubing to accommodate screws for rubber cups, then upper holes are drilled oversized to clear screw head, permit screw driver to enter to turn screws into the cups as indicated here.



Close-up shows how aluminum tubing is fitted in holes bored through hardwood strips, location of rubber suction cups, method of passing tie-down straps around hardwood strips near tubing. Straps are not fastened.

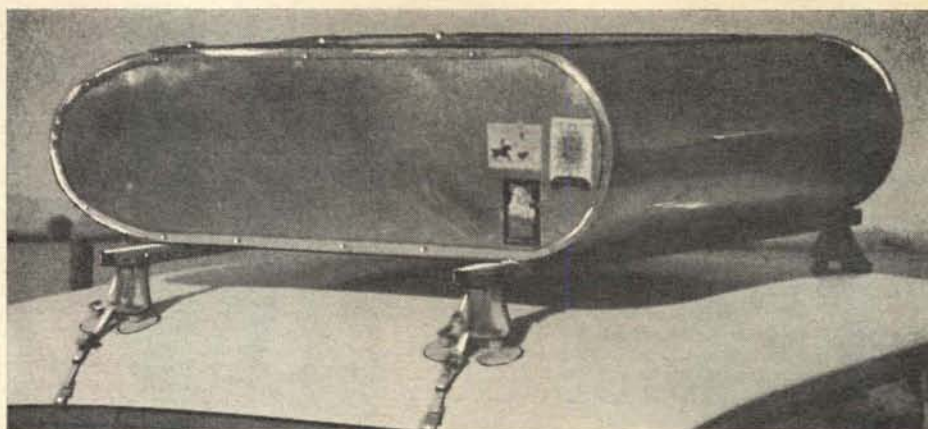
BUILT ON A FRIDAY EVENING to do a job Saturday morning, this car-top carrier cost less than \$5.00 for materials, took only a couple of hours to build and on its first trial carried five 14-ft. 2 x 4s, two 10-ft. 2 x 4s and two sheets of 1/2-in. plasterboard measuring 4 x 10 ft. Because the front and back tubing and the hardwood strips on the side form a "fence," boxes can be placed on the roof and kept inside this enclosure. It is necessary, of course, to use an old blanket to keep from scratching the paint, and the boxes cannot be very heavy or they will bow the sheet metal of the roof near the center. Heavier boxes and items are fitted on planks placed across the side members or front and back tubes. The suction cups should be located as near to the side curves of the roof as possible, as this is the area of greatest

strength. At the same time the cups cannot be located too far "outboard" or the tubes will be too close to the roof top. We did find a certain amount of flexing when carrying a heavy load, but no damage to paint or metal has resulted after several months of using the carrier. One standard 8-ft. length of do-it-yourself 1 1/4-in. aluminum tubing is cut in half to provide the necessary two lengths. Straight-grained hardwood strips measuring 3/4 x 2 x 50 in. were bored to accept the ends of the tubing, as indicated, and the ends rounded for appearance. Several coats of spar varnish then were applied. Chrome-plated sheet metal screws were driven through counter-bored holes in the hardwood strips and into the aluminum tubing.

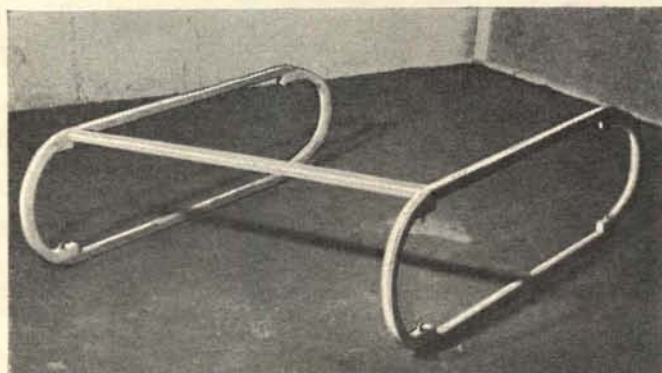


Carriers

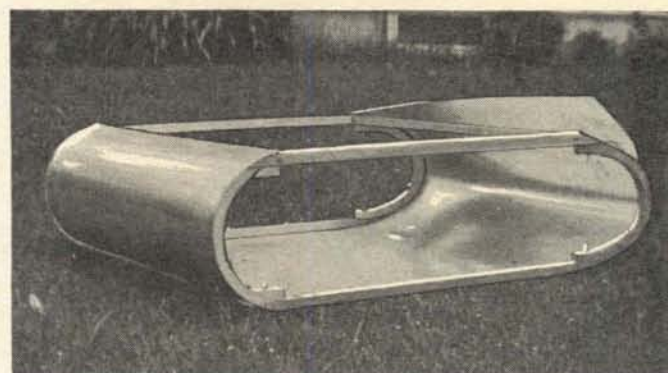
JAMES HYEK



Finished unit on roof of car is neat and compact, aluminum stands weather well. Original carrier, shown here, rode well and stayed in place during a 7,000-mile trip through the southwestern states. Extra storage space was definite advantage on the road.



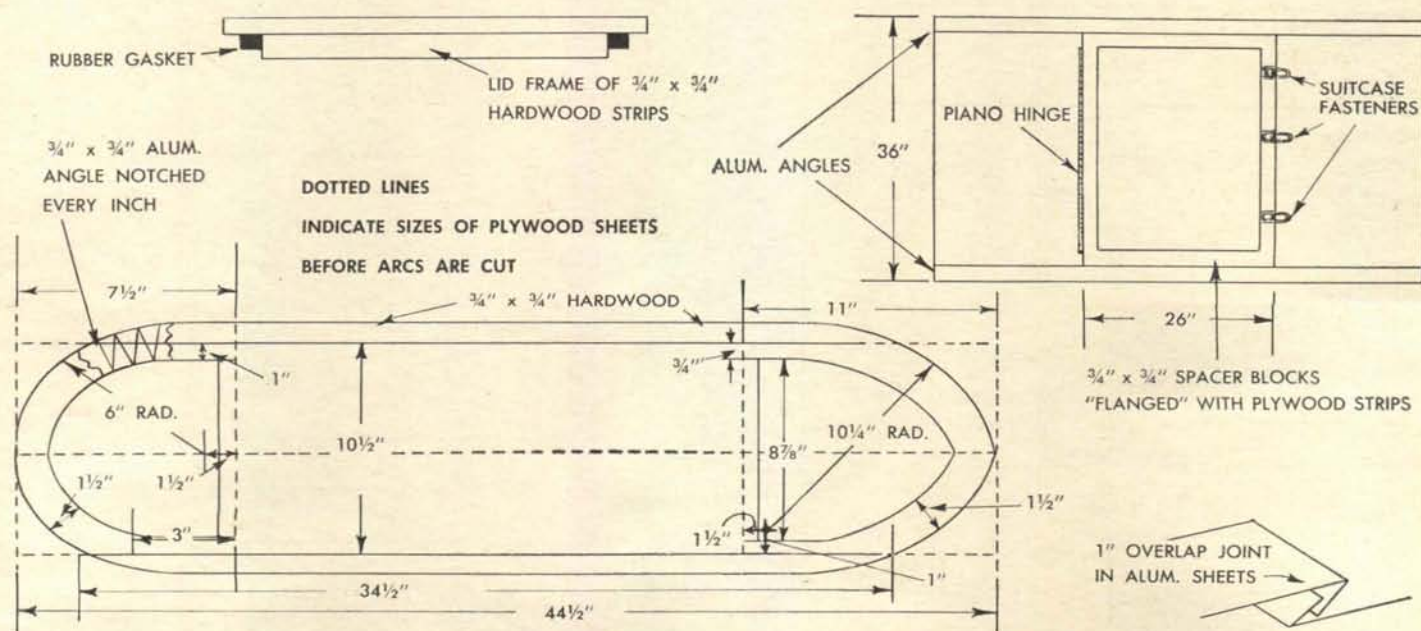
Lightweight hardwood-and-plywood frame, with aluminum sheets for covering keep total weight of the carrier to just a few pounds. Note how hardwood strips are tapered to follow curve of front and rear members.



On original unit, sheets of aluminum from metal supplier were used. Do-it-yourself aluminum sheets measure only 3 x 3 ft., will require the use of overlap joints as indicated in drawing.

FALL AND WINTER auto vacations require a closed car-top carrier for luggage overflow. This unit can be bolted to a manufactured carrier, or the carrier described on the opposite page can be modified to accommodate it. Pieces of $\frac{3}{4}$ -in. plywood are used for cutting the front and rear arcs, then these are joined with hardwood strips. Vertical members centered 10 in. from the back permit attaching overlap joints in 3 x 3-ft. aluminum sheets. Calking compound is spread along the edges

of the carrier, then aluminum angles are screwed to it to seal the joints. The lid is fitted with a piano hinge at the front, locked with suitcase fasteners at the rear. Hardwood strips front and back are "flanged" with 1-in. strips of $\frac{1}{4}$ -in. plywood and spacer strips along the sides of the lid opening are treated in the same manner. A strip of $\frac{1}{4}$ x $\frac{1}{2}$ -in. rubber gasket seals the lid against weather. $\Delta \Delta$



Venetian-Blind Radiator Covers

D. A. WILLIAMSON

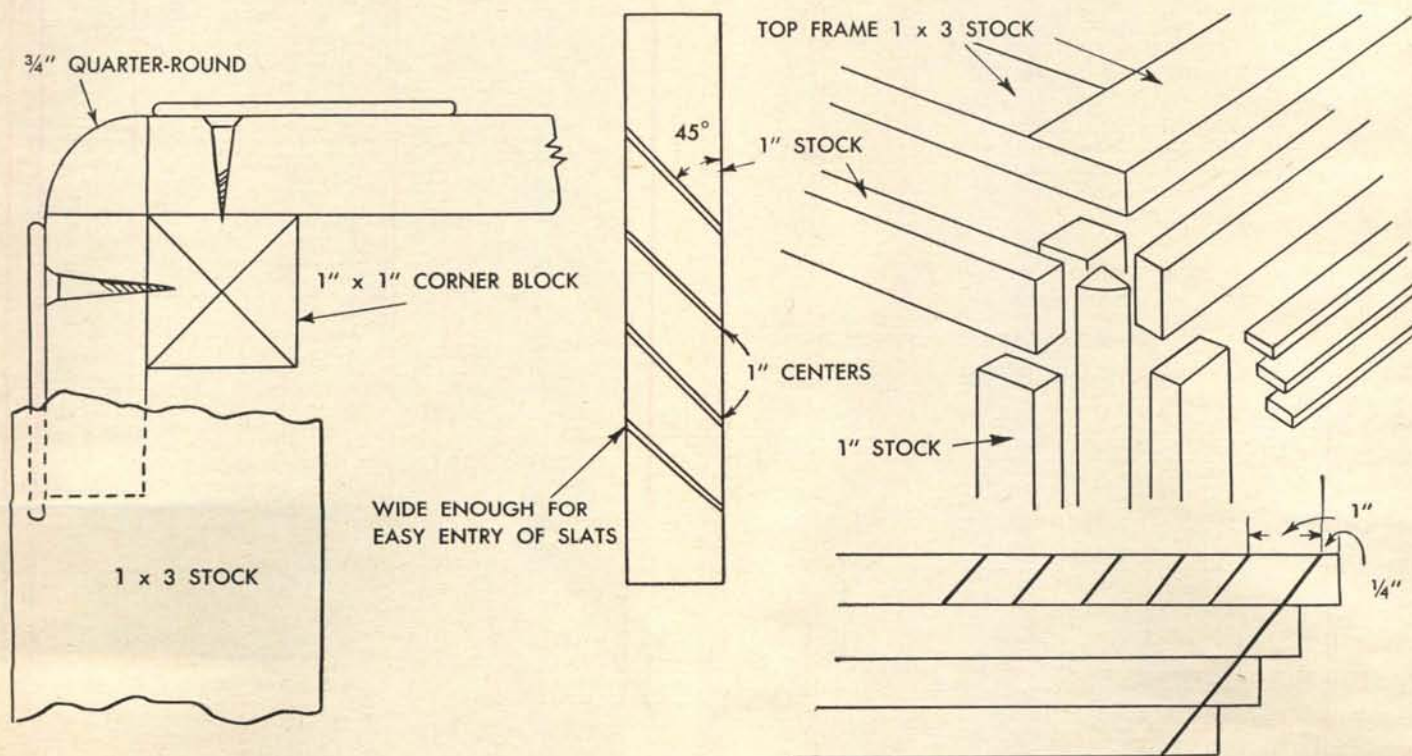


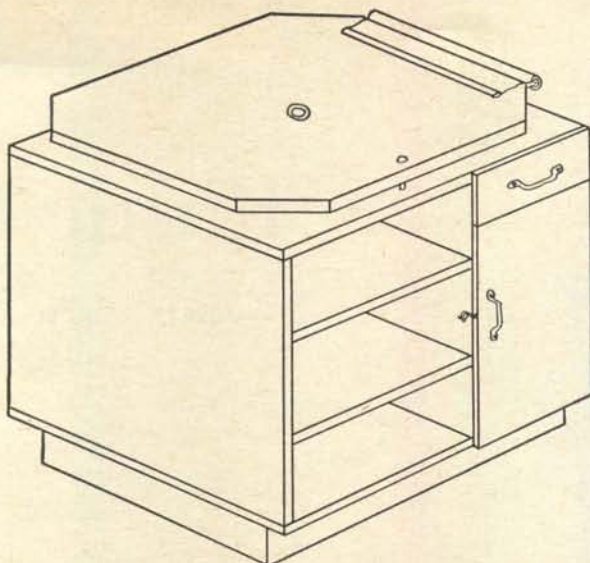
NEAT, ATTRACTIVE and modern is this radiator cover that consists of a simple wooden framework fitted with wooden slats salvaged from discarded venetian blinds. The width of the original slats was 2½ in., so they were ripped lengthwise to produce louvers 1¼ in. wide. This also doubled the number of slats available. If you do not have venetian blinds from which to get the slats, rip them from clear, straight-grained, 2-in. lumber. The resulting slats will be about 1½-in. wide, but this dimension is not critical. Radiators vary greatly in size and shape, so no dimensions are given. Also, the cover has no back. All members of the

Clean, uncluttered design of this radiator cover fits decor of any room. It looks like any well-made piece of furniture, could as readily disguise a hi-fi speaker as it does the radiator.

cover are cut from 1-in. pine. Note that the corner members are glued and nailed to a 1 x 1 block, the edges of the block and members being positioned flush with each other. The space between is filled with a ¾-in. quarter-round. As indicated in the drawing, mark one member with lines 1 in. apart at 45 deg., then measure ¼ in. from the end of each of the other members and make a mark. Clamp all members together so the end marks align, then saw the slots all at once. This assures

that all facing slots will be identical. The slots are about ¼ in. deep. In the original cover, the end members of the front and sides were about ¼ in. narrower than the width of a blind slat that had not been cut. These slats were nailed over the frame to cover the ends of the slats and to provide a neat trim. If you cut your own slats, the width of the members and of the trim strips can be made to suit. The top of the radiator cover is open and can be fitted with slats, or expanded metal. △ △



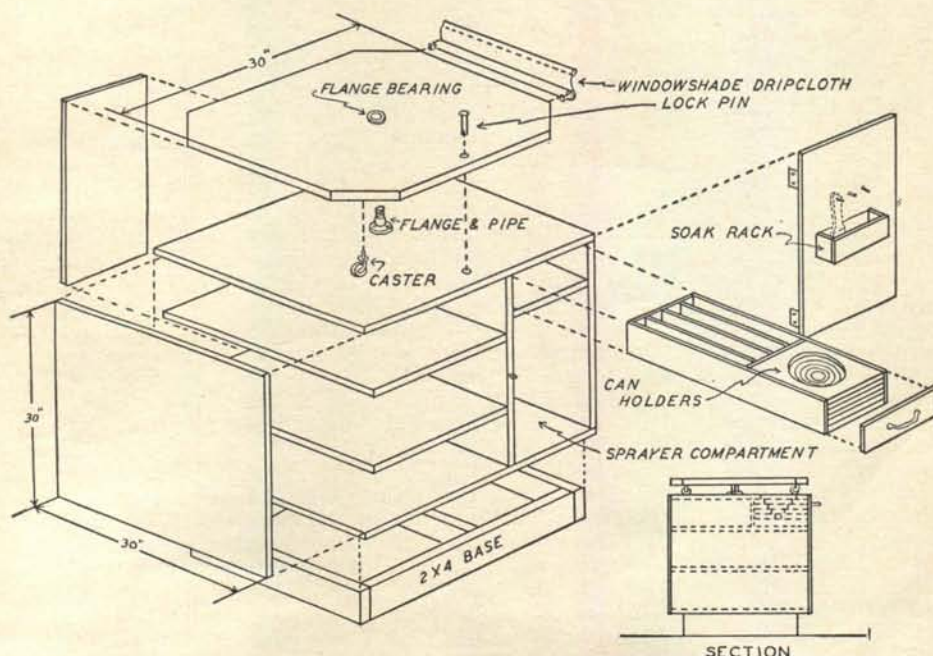


Workshop Finishing Center

M. H. SLUTZ

SPACE FOR ALL PAINTING supplies is provided in this handy finishing center. All dimensions are optional and will depend on the size of your shop and the amount of finishing you do. The suggested dimensions are for an average shop. The rotating top, which should be square, is fitted with a pipe flange that has the threads reamed or filed away, to provide a bearing. A floor flange and short length of pipe are fitted on the top of the cabinet itself to position the rotating member. Four casters, they also can be ball-bearing casters, are fitted on the underside of the rotating top to support it. The plywood box that forms the soak rack for

dirty brushes is lined with metal, or a metal pan, and nails are driven into the door to support brushes. The front compartment of the drawer is fitted with five layers of plywood, a hole being cut in each to accommodate a different-size paint can. The window-shade drip cloth is an optional item, and need not be included in your own cabinet. If you do not have a paint sprayer, the sprayer compartment can be eliminated, and the shelves widened to fit completely across the inside of the cabinet. Paint the cabinet to match your shop, and to make paint removal easier. △ △



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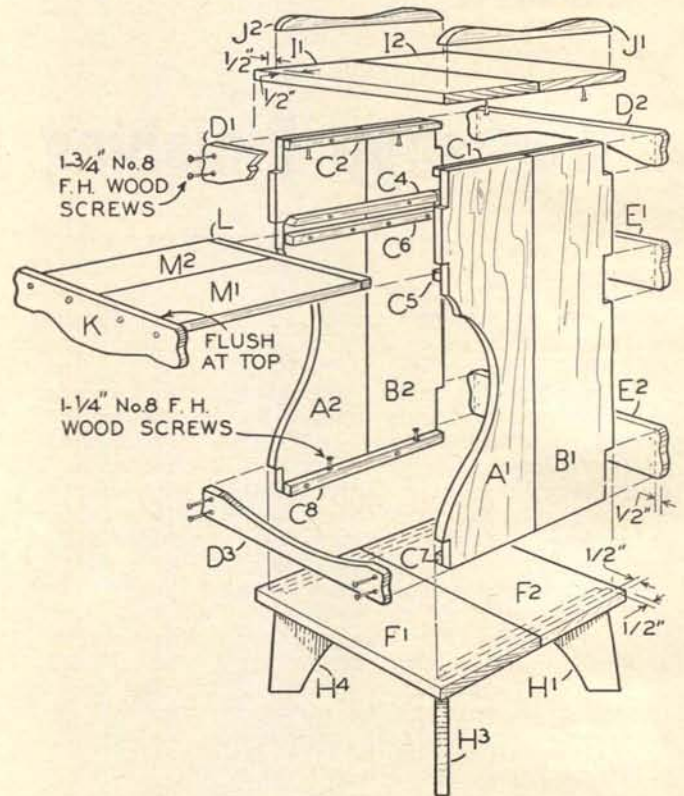
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Rustic-Pine

ROBERTA FAIRALL



BEAUTY AND UTILITY are combined in this telephone cabinet that is an ideal addition for a home that has early-American furniture. The generous-size top has space for a pen or pencil and reminder pad, as well as the telephone, while the pull-out shelf provides ample storage for the largest of telephone directories. There is additional storage space on the lower shelf, or it can be used to contain an attractive plant, such as indicated in the illustration. Cut the cabinet entirely from 1-in. knotty-pine lumber, and assemble with glue and screws in the following steps:

1. Cut templates from lightweight cardboard for the curved outlines. Next, following the dimensions given, lay out all the members on the wood and cut them to shape. When measuring and cutting, remember to allow for the width of the saw cut. True and sand each piece, mark positions of joining surfaces with lead pencil, then locate and bore pilot holes for all screws and countersink them.

2. Join legs H to bottom cleats C. Edge-glue bottom boards F, and draw them together by mounting the leg units.

3. Edge-glue sides and assemble with cleats C.

4. Locate rails D and stretchers E, in mortises cut into sides.

5. Join sides to bottom by driving screws through cleats C, then drive a couple of 6d finishing nails from underneath F into the rail and stretcher. Joint top boards I with cleats J and complete the unit by setting the top in position. Drive screws through cleats C.

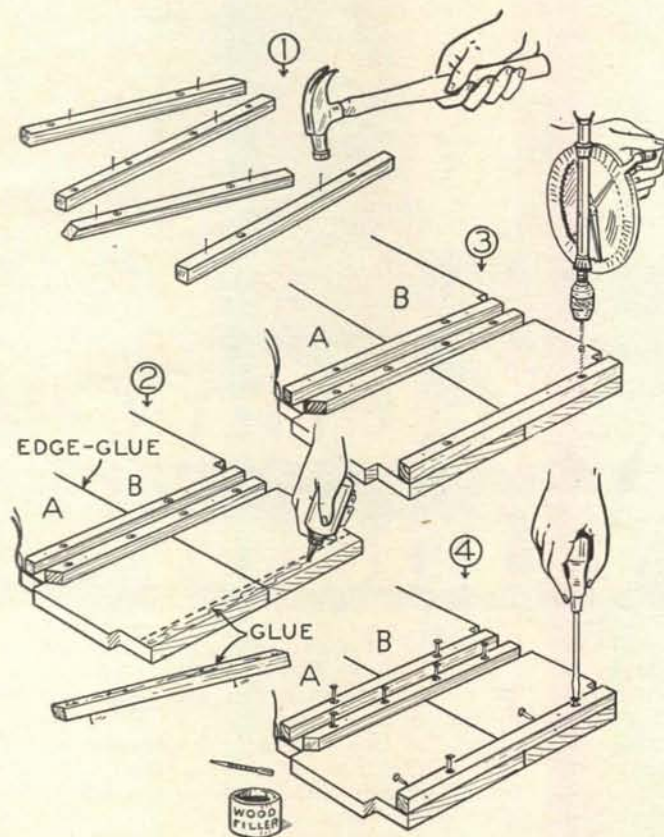
6. Assemble the pull-out shelf.

Round off all sharp edges with sandpaper, brush on a light stain, then wipe away the excess. Finish with two coats of spar varnish. Rub down each coat of varnish with very fine steel wool when it is thoroughly dry, and before applying the next coat. The steel wool will remove small irregularities in the varnish coats and dull the shine. A soft luster can be given to the finish by applying paste wax.

When assembling the cabinet, be sure to allow enough space between the sides so that the pull-out shelf will slide easily. However, if the shelf fits too snugly, it can be easily planed down to provide an easy, sliding fit. The same problem may occur if cleats C are located too close together. It is best here to allow ample clearance, about $\frac{1}{8}$ in., between the shelf and the cleats.

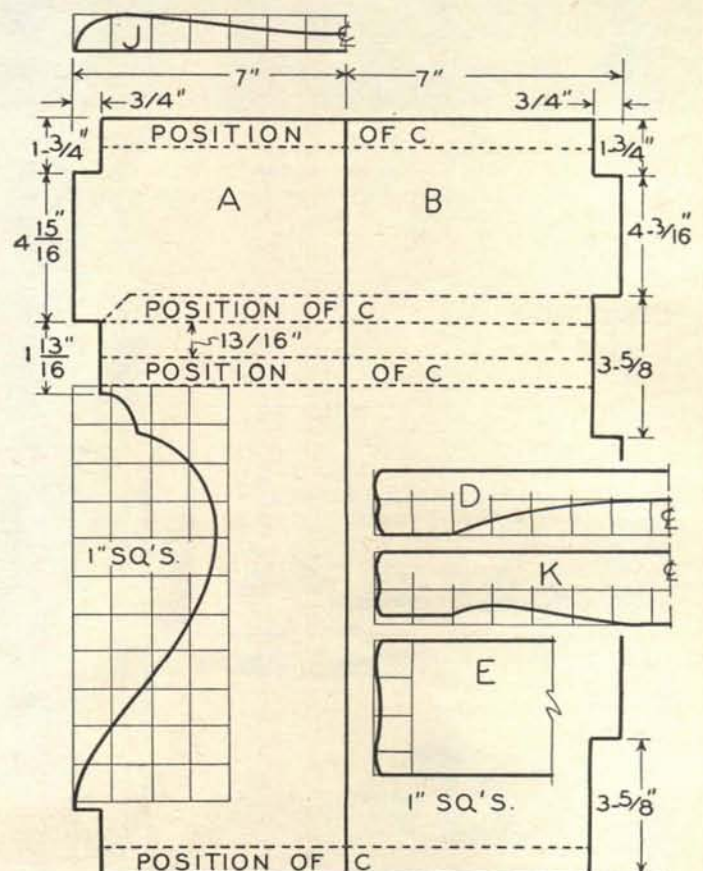
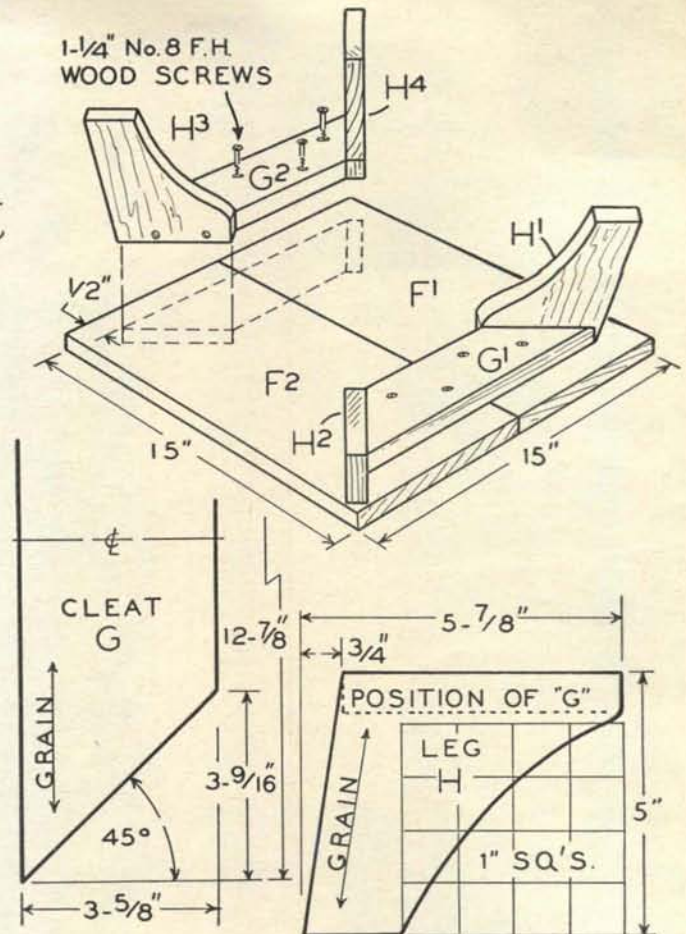
A stop to prevent the shelf from being pulled out all the way can be provided by screwing a block of wood to the underside of the shelf, near the back edge. Another block then is screwed to the lower shelf cleat, about 2 in. back from the front edge. A pair of stop blocks can be used on just one side of the shelf, or one pair can be used on each edge, to prevent possible binding of the shelf. $\Delta \Delta$

Telephone Cabinet



MATERIAL LIST

All lumber 1 x 8, surfaced, knotty-pine.
 A—Side (front section), 7" x 20", 2 req'd.
 B—Side (back section), 7" x 20", 2 req'd.
 C—Cleats, $\frac{3}{4}$ " x 12 $\frac{1}{2}$ ", 8 req'd.
 D—Rails (top and bottom front), 1 $\frac{3}{4}$ " x 15", 3 req'd.
 E—Stretchers (back) 3 $\frac{5}{8}$ " x 15", 2 req'd.
 F—Bottom Boards, 7 $\frac{1}{2}$ " x 15", 2 req'd.
 G—Bottom Cleats, 3 $\frac{5}{8}$ " x 12 $\frac{7}{8}$ ", 2 req'd.
 H—Legs, 5" x 5 $\frac{7}{8}$ ", 4 req'd.
 I—Top Boards, 7 $\frac{1}{2}$ " x 15", 2 req'd.
 J—Top Cleats (railing), 1" x 14", 2 req'd.
 K—Front of Pull-Out Shelf, 2" x 15", 1 req'd.
 L—Back Edge of Pull-Out Shelf, $\frac{3}{4}$ " x 12 $\frac{3}{8}$ ", 1 req'd.
 M—Pull-Out Shelf, 6 $\frac{3}{16}$ " x 11 $\frac{3}{4}$ ", 2 pcs. req'd.



"Stained-Glass" Windows

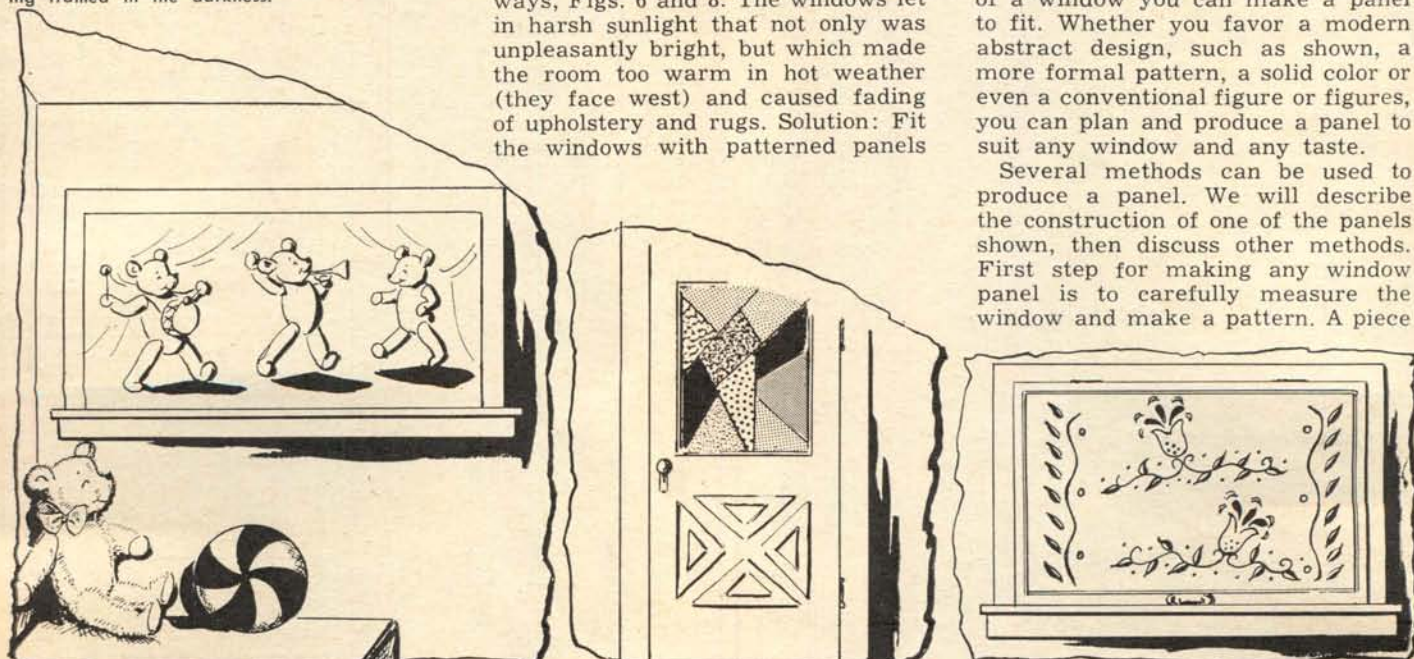
1. At night the interior lights shine through the translucent colored fiber-glass panels so they glow with vivid hues like some abstract painting framed in the darkness.

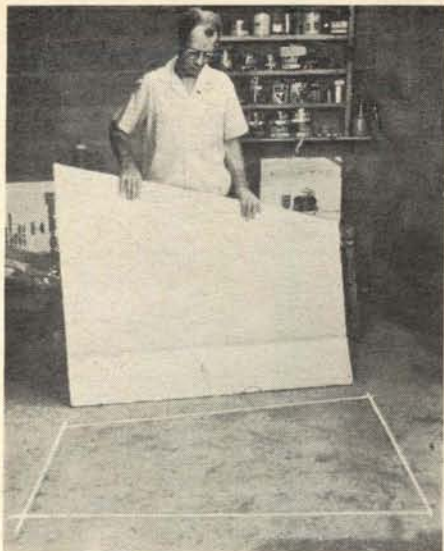
PROBLEM: TREATING WINDOWS high on a wall that could not easily be fitted with drapes, nor decorated in other ways, Figs. 6 and 8. The windows let in harsh sunlight that not only was unpleasantly bright, but which made the room too warm in hot weather (they face west) and caused fading of upholstery and rugs. **Solution:** Fit the windows with patterned panels

of fiber-glass. Where do you get the panels? You make them yourself.

No matter what the shape and size of a window you can make a panel to fit. Whether you favor a modern abstract design, such as shown, a more formal pattern, a solid color or even a conventional figure or figures, you can plan and produce a panel to suit any window and any taste.

Several methods can be used to produce a panel. We will describe the construction of one of the panels shown, then discuss other methods. First step for making any window panel is to carefully measure the window and make a pattern. A piece





2. Pattern for each window is cut from heavy cardboard, such as can be salvaged from a large carton obtained at your grocery store, or even from heavy wrapping paper.



3. Outline of pattern next is traced on concrete floor of basement or garage. (A piece of plywood or a table top could be used for smaller patterns.) A sheet of cellulose film is placed over the outline, to prevent the finished panel from adhering to the surface. Lightweight mat is used here, heavier mats are available.

of corrugated cardboard from a large packing box was used for the pattern of the panel described, Fig. 2. This pattern was traced on the basement floor. It could have been a garage floor or any large, flat area. For smaller patterns a table top could be used. The next step was to gather the materials; clear resin, hardener, colors, cleaner, thinner, fiber-glass laminating mat and cellulose film, Fig. 3. The cellulose film is placed over the tracing and held with strips of masking tape. The cellulose prevents the resin and glass mat from adhering to the surface. The mat now is cut to the shape of the tracing, positioned, and resin mixed with colors and hardener is painted on the mat, Fig. 4. After the resin has been applied over the full panel, it is allowed to set for several hours, Fig. 5. When the resin has set thoroughly, the panel is peeled from the cellulose sheet and any resin that has run over the edge of the mat is trimmed away. With a single thickness of mat, ordinary scissors can be used for this job. If a lamination of several mats is used, the trimming is done with

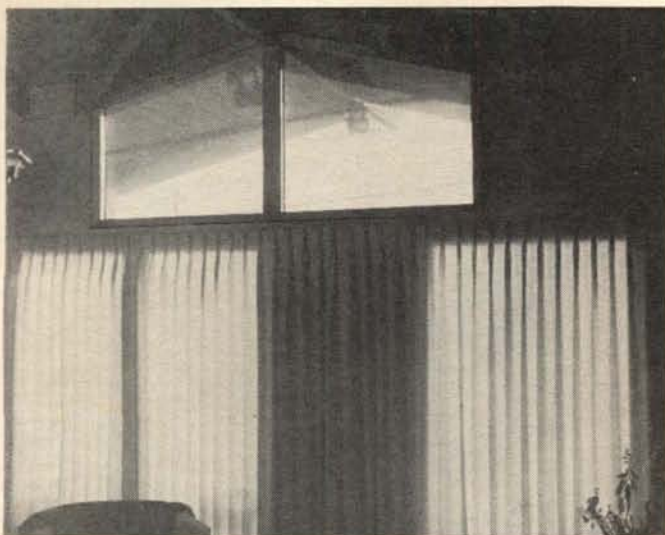


4. Color is added to clear resin in several containers, mixed well, then hardener is added and colored liquid is brushed on the glass mat in desired pattern. While abstract, modern design is used here, more conventional and formalized patterns are as easily applied. Design to be copied can be placed under cellulose film, simply "traced."

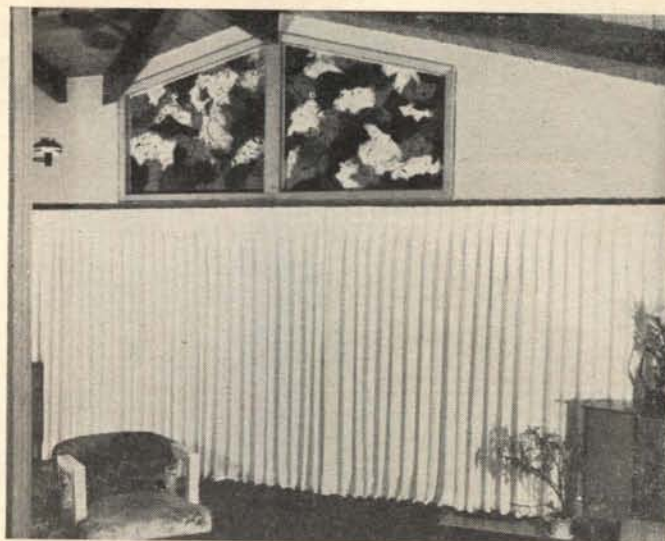


scissors before the resin has set completely. After setting hard, the resin plus several thicknesses of mat will have to be trimmed or cut with a jig saw, as the material is much too strong to be cut with scissors. In the case of the panels shown, some minor trimming was required to fit each one in its own window. Masking tape was used to hold them in place temporarily, then thin strips of wood were nailed to the window frames to hold the panels permanently, Fig. 7. Small nails were used, so the strips can be removed easily in the event

5. Completed panel now is left alone for several hours until colored resin sets. Ordinary scissors are used to trim edges of panels, cut them to fit perfectly in windows.

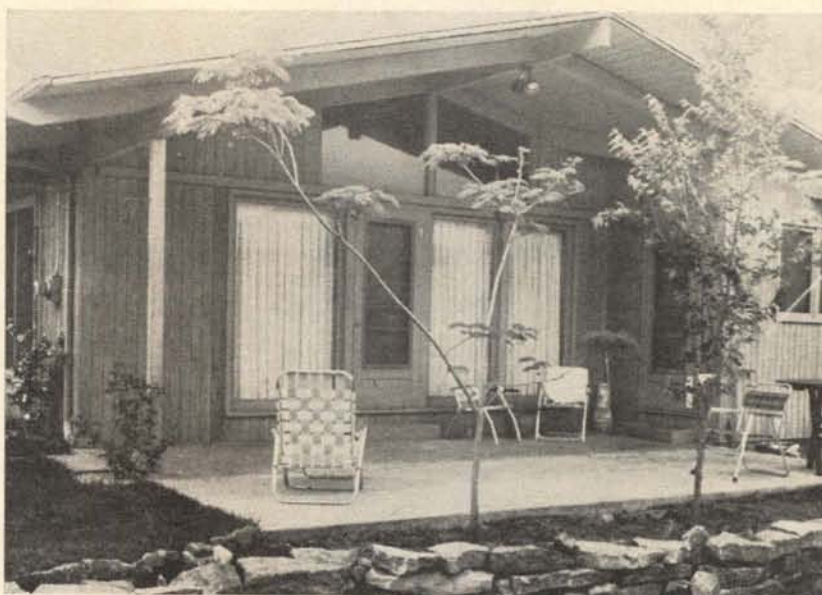


6. Problem windows are shown here before application of panels. They are so high that decorating is almost impossible; hot afternoon sun heated the room excessively, caused fading of furniture.



7. After panels were installed sun's rays are muted, making room much cooler and more pleasant. What were ordinary windows with no view and no attractive features now have become center of interest.

8. View from outside of home shows the blank, uninteresting look of the windows before the installation of the fiber-glass panels described.

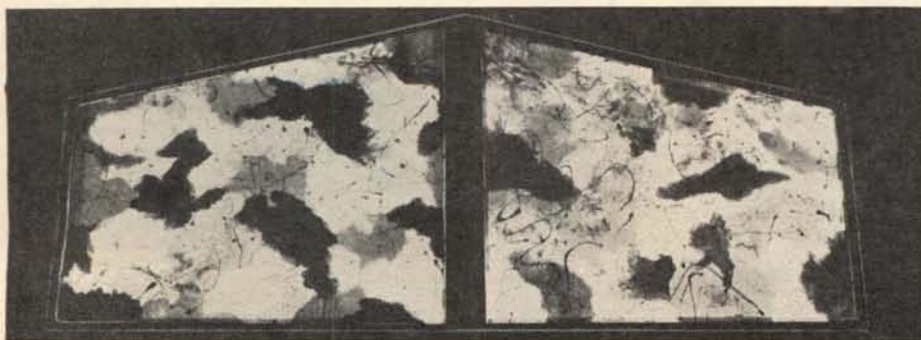


materials. Available for the hobbyist and craftsman who wants to work with the resins and fiber-glass cloths and mats are particles of mother-of-pearl, glitters of various kinds, tinsel and many other materials for embedding in a panel. Objects that are too thick to be fitted in a lamination can be fixed to the surface of a panel, then coated with resin to seal them.

Making the panels can be profitable. Each panel you make is a unique design, with no duplications

(unless ordered) anywhere. Any homeowner who is interested in something unusual and different is a potential customer. Make some of the panels for your own home to learn the techniques required, and to display the panels in settings that show their beauty and practicability.

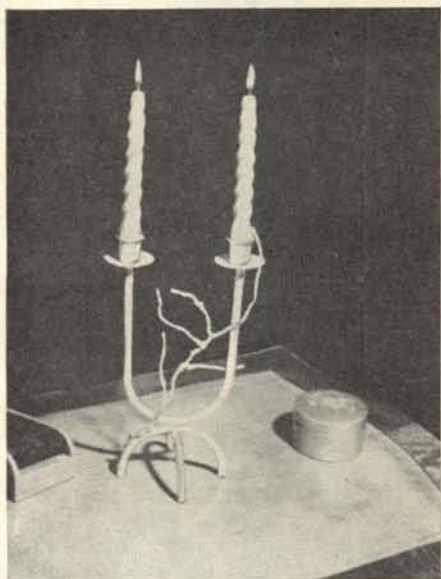
Or, just as a hobby of your own, give your home a touch of the unusual by night (Figs. 1 and 9) and by day. For further information write Castolite Co., Woodstock, Ill. $\Delta \Delta$



9. Reds, blues, whites, blacks and yellows are contrasted and intermingled in these panels that transformed windows to "paintings."

Torch Casting

Photos courtesy Linde Co., Div. of Union Carbide Corp.



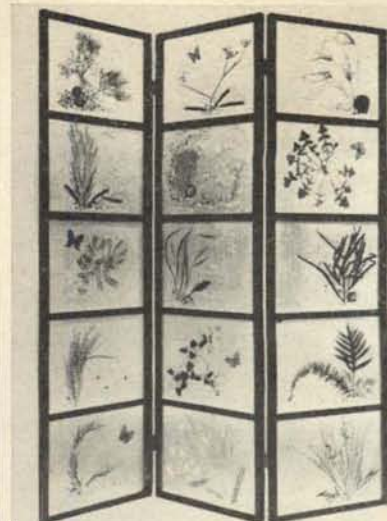
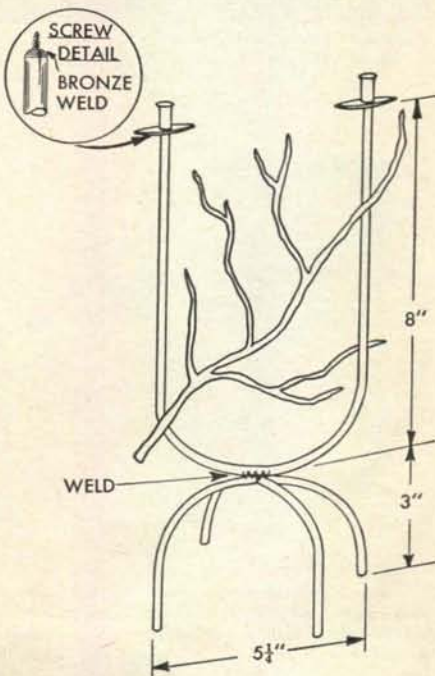
Simple lines of candelabrum made from welding rod are highlighted by addition of bronze "twig" cast with welding torch.

WELDED METAL ITEMS, such as lamps, book ends and furniture can be given an added touch of beauty with torch casting. Bronze welding rod is used for this method of free-hand casting, to produce free-form shapes. The casting is done on a piece of $\frac{1}{4}$ -in. steel plate or firebricks. Do not use thinner gauges of metal, or other material, because the melted rod will adhere to them. The bronze welding rod is held at a slight angle to the steel plate and flame from a No. 2 welding tip is applied. As the rod melts the flame is moved to the unmelted portion of the rod. For thin sections, move the torch quickly, for thicker sections move the torch slowly and let the metal build up. To form the shape of the twig shown, move the rod from side to side. Make a single branch about 14 in. long, then add shorter branches to it. When the twig is complete it can be pried off the plate easily. It will be flat on the plate side, so run the flame over that side to make it round. Finally, heat the entire casting, then dip it in water to remove foreign matter. This operation also anneals the casting so it can be bent to fit any item to which it is to be welded or attached mechanically.



Twig is formed by melting bronze welding rod with torch, turning and twisting rod to produce irregular, natural appearance.

The twig can be brazed to a candelabrum, such as detailed. This is shaped from $\frac{3}{8}$ -in. welding rod with the general dimensions given. The candle cups and dishes are thin steel, and can be purchased from most hardware stores. A self-tapping screw $\frac{3}{8}$ -in. long is brazed to the upper ends of the candelabrum arms, then the cups and dishes are drilled to be turned onto the screws. Paint the completed candelabrum flat black, and the job is done. $\Delta \Delta$



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Renew a Kitchen With Floor Tile

Photos courtesy Armstrong Cork Co.



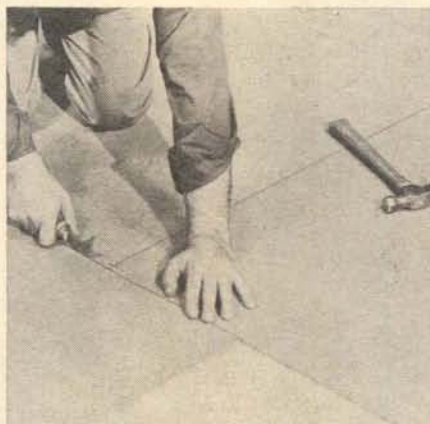
Finished and ready for family traffic, this floor job takes just a weekend. The smooth, durable surface of the tile is cleaned easily, keeps its sparkling appearance for years. Vinyl-asbestos tile is do-it-yourself favorite, being easy to install.

THERE IS NO EASIER, lower-cost way to bring new life to your kitchen than to install a floor of colorful resilient tile. Paint or paper on the walls is necessary, of course, when redecorating, but nothing will produce a sparkling new-room look the way floor tile does.

Step-by-step photos on these pages show the installation of vinyl-asbestos tiles that are available in a wide variety of brilliant colors and patterns. First step is to prepare the floor surface, removing any old floor materials and cleaning and sanding away any adhesive, wax or grease on the surface. If a floor is in very poor condition, sheets of tempered hardboard, rough side up, or plywood are nailed to the floor. Joints are staggered and the sheets are spaced $\frac{1}{32}$ in. apart to allow for expansion. The center of the room is found by drawing lines from the centers of the opposite walls to meet at right angles. A test line of tiles is fitted along one line. If the space between the wall and the last tile



Irregularities in a wooden floor should be planed flush, cracks filled with wood putty. Any adhesive from old tile, wax, oil and grease should be cleaned off. No felt paper need be used under vinyl asbestos tile.



Wooden floors of single thickness, or floors in very poor condition, should be covered with sheets of tempered hardboard or plywood. Space the sheets $\frac{1}{32}$ in.—about the width of linoleum knife—apart as shown.

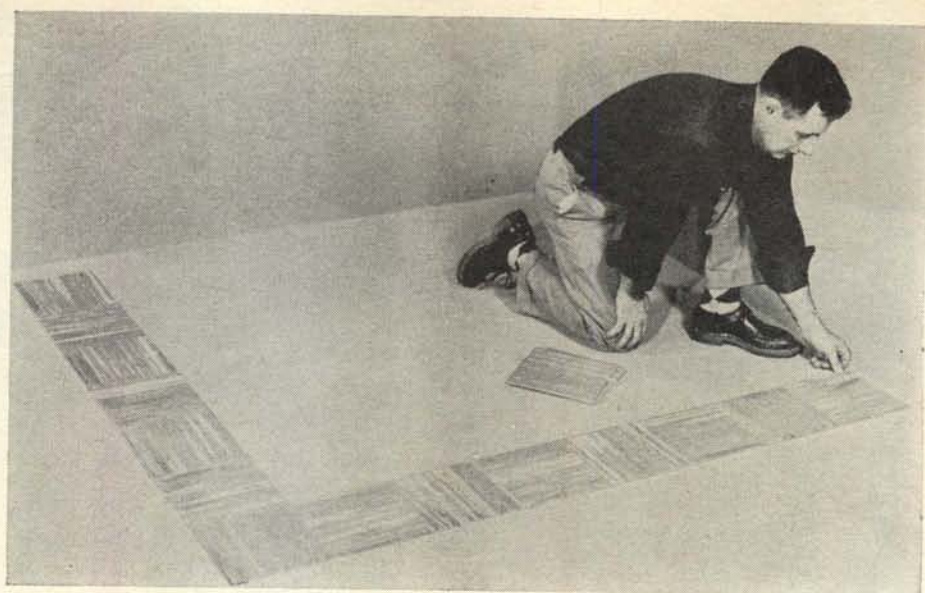


Snap a chalk line from the centers of two opposite walls, then find center of this line and draw line perpendicular to it with framing square. Extend this latter line from one wall across to the other.

in less than 2 in. or more than 8 in., move the center line parallel to that particular wall $4\frac{1}{2}$ in. closer to that wall. Adhesive next is applied and tiles are placed along the center line, parallel to it. End tiles are marked for length, then cut and fitted in place. Tiles are fitted around pipes and other obstructions by first making a paper pattern. The pattern is traced on a tile and cut with scissors.

In just a weekend you can have that brand-new floor of easily-cleaned, long-lasting resilient tile in place, ready for family traffic. $\triangle\triangle$

Along the chalk line, lay a test row of tiles from one end wall and one side wall. Butt tiles together, keep them parallel to the chalk lines. Tiles are placed with pattern alternating.



If the distance between the wall and the last tile is less than 2 in. or more than 8 in., move the center line parallel to that wall $4\frac{1}{2}$ in. closer to the wall. This is necessary to assure best appearance of floor.



Use a chalk line to mark the floor for both the perpendicular to the center line, and to indicate the required re-spacing when that is necessary where the last tile space is too long or too short as in preceding photo.



Start at the center and place tiles in cement that has been troweled on floor, making sure that first tiles are flush with chalk line and that each tile is butted tightly against adjoining tiles. Do not slide tiles.



To fit border tiles, place loose tile "A" exactly over last tile in row. Take another tile, "B," and place it on top of tile "A." Butt tile "B" against wall and mark tile "A" along the edge of tile "B" with pencil.



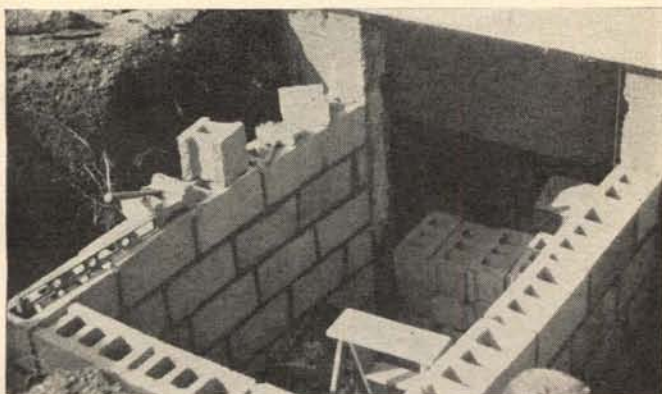
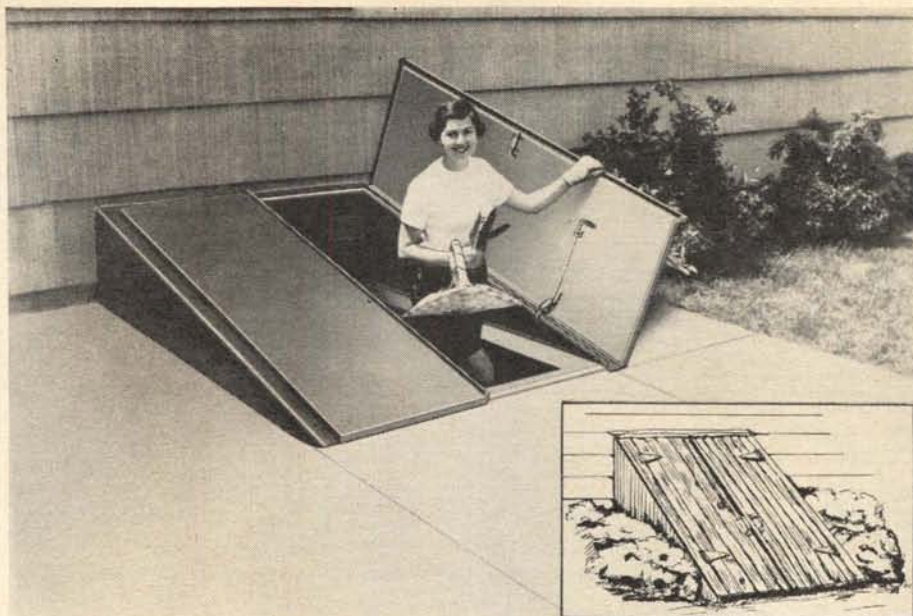
The cut portion of tile "A" will fit into border space exactly. Repeat this operation until the border area is covered completely. As you complete each quarter of the room, roll the tiles with rolling pin or linoleum roller.



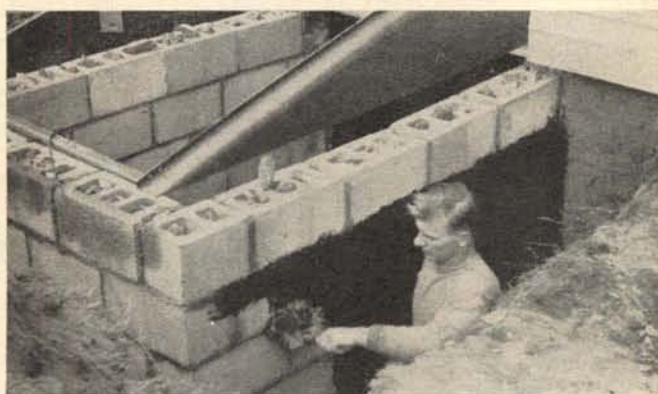
Tiles are fitted around pipes and other obstructions by first making paper pattern. Pattern is traced on tile and it is cut with scissors. Tile, of course, is split on side toward the wall so it can be fitted in place.

1. Replace that old wooden basement hatch with a modern steel unit that is weather-tight, opened easily with just one hand.

Installing A Basement Door



2. If your home now has no outside basement entrance, an excavation is made and an opening knocked in foundation wall. Concrete-block wall then is built around the stairway well to dimensions of hatch.



3. Metal sides of hatch are positioned, then outsides of block walls are sealed with asphalt coating. Note that siding is cut away so sides of hatch can be fitted snugly against sheathing for watertight joint.

OLD-FASHIONED, WOODEN basement hatchways that are worn and weathered are an eyesore and can be dangerous. An easily-installed steel replacement hatchway is the answer to that problem. If your home does not have the convenience of an outside basement door—have you tried to carry in a full sheet of plywood?—

a stair well can be built around an opening broken through the foundation wall, and a steel hatch installed as shown in Figs. 2 through 5. A homeowner can do the job himself. For the name of your nearest dealer, write to the Bilco Co., New Haven 5, Conn. and mention that you are a **WORKBENCH** reader. $\Delta \Delta$



4. Stair well now is back-filled and soil compacted firmly. Stairs now can be installed to permit entering basement.

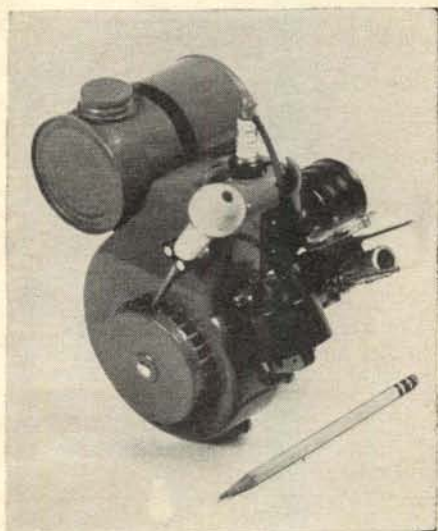


5. Wooden form is constructed so concrete can be poured around well to cap wall, seal hatch and give finished appearance.



6. Steel stair stringers are available for quick installation; lengths of 2-in. lumber are cut to form the treads, hammered in place.

Gasoline Engine For Portable Tools



Ordinary wooden pencil shows small size of this gasoline engine that weighs just a little over 3 lb., can power portable tools.

HAVE YOU EVER BEEN SHOCKED by an electric hedge trimmer or other tool or appliance, and wondered why it wasn't possible to utilize a miniature gasoline engine for power? Until now there have been no engines small and light enough to do the job. Ohlsson and Rice, pioneers in the field of gasoline engines for models, have produced an engine that weighs only 3 1/4 lb. is just 5 3/4-in. high, exclusive of the spark plug. The engine will be supplied in power ranges from one-half up to one horse power.



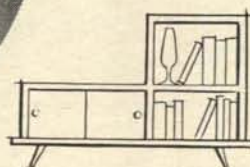
"I don't have measles! I just finished painting the ceiling!"

CHOOSE...

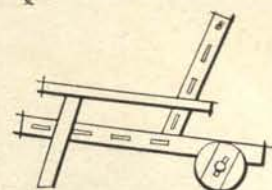


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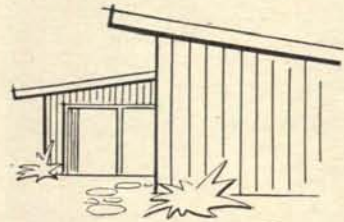
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Lady Craftsman

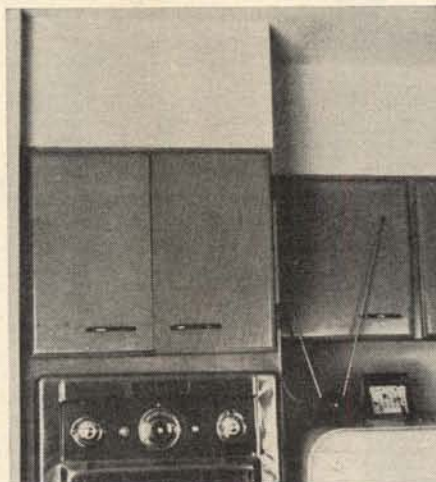


1. Most of the furniture in this room, including the firescreen, clock on the wall, sofa and TV cabinet were built by Mrs. Benner in her shop.

HOW MANY WOMEN are do-it-yourselfers with home workshops? We are convinced that there are many more than most men—and many manufacturers—believe. Mrs. Roy Benner of Kansas City, Missouri is an example of this type modern-day wife, mother and lady craftsman. She has built most of the furniture in their new home, including an 18-ft. sofa, and presently is remodeling the basement, which requires tearing out walls and building new ones, as well as installing new lights and wiring. Mrs. Benner has built a 14-ft. runabout boat, complete with a fiberglass covering, and a pair of water skis to go with it. Her workshop is in the garage, which simplifies carrying in sheets of plywood, and moving out boats. She gets ideas from **WORKBENCH**, but redesigns most things to suit her own ideas. After all, it's a woman's prerogative to change her mind. Δ Δ



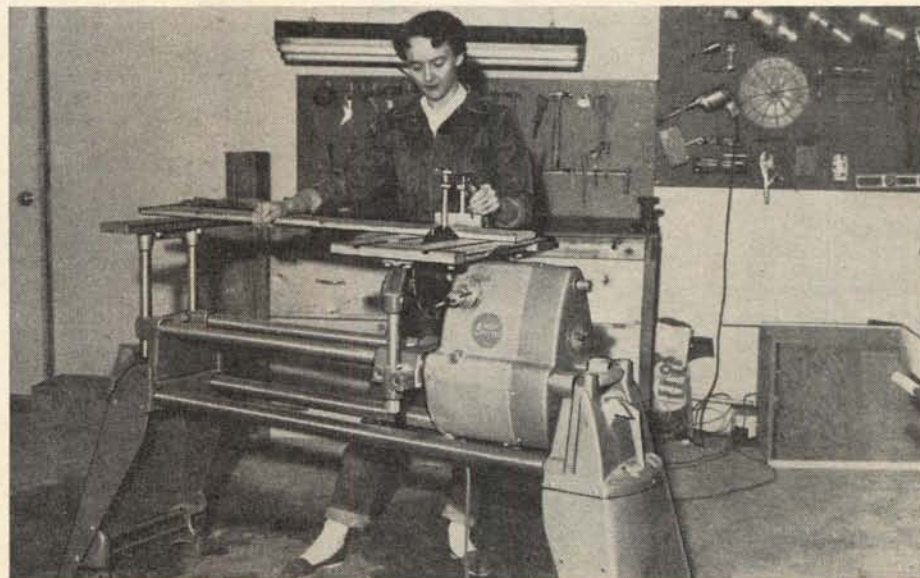
4. Frame of the shade on this pole lamp is solid walnut, covering is translucent plastic. Lamp was made completely by Mrs. Benner.



2. This cabinet over the built-in oven was too deep to be useful, so Mrs. Benner installed a table-model TV set, here hidden by doors.



3. Because of off-set in wall, doors are hinged together at center so they both can be pivoted completely out of the way for TV viewing.



5. Her well equipped garage workshop is built around this combination power tool that can handle the majority of woodworking operations.

PAINT MITTS



1. Paint-roller pan permits easy removal of excess paint from mitt that here is used to paint round legs and rungs of a step-stool.

WEAR A PAINTBRUSH like a glove. It's a fact, you can, and simply shape your hand to fit whatever surface you are painting. Overhead pipes in the basement are a snap; you dip the mitt into the paint, wipe off the excess, wrap the mitt around the pipe and start walking. Painting eaves troughs, round or square, is time consuming with a brush, and a roller can't be used. With a paint mitt the job is as simple as dragging your hand, Fig. 3. Painting the rungs and legs of chairs, stools and the like, Fig. 1, is another place where the mitts save time and trouble. And for a fast job of applying wax to a paneled wall, Fig. 2, a mitt can't be beat. Some of the mitts are simply square sacks of material with a cuffed opening for



2. Another job for which paint mitt is ideal is application of liquid wax to large surfaces, such as wood-paneled walls.

the wrist, others have a thumb, just like a mitten. Plastic linings are used in some mitts, others are unlined. It is necessary to wear a rubber glove when using the unlined mitts, as the paint will soak through the material of the mitts.

Paint mitts are available at most paint-supply stores, but in the event that you can find none locally, learn your nearest distributor by writing to: Bestt Rollr Inc., 160 South Brooke, Fond du Lac, Wis. Δ Δ



3. Ordinarily time-consuming job of painting the insides of eaves troughs is as simple as using cloth to wipe out dirt and debris.

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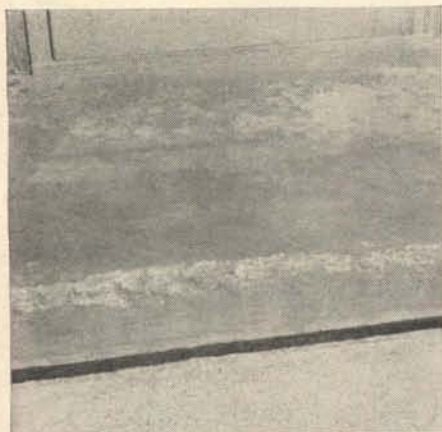
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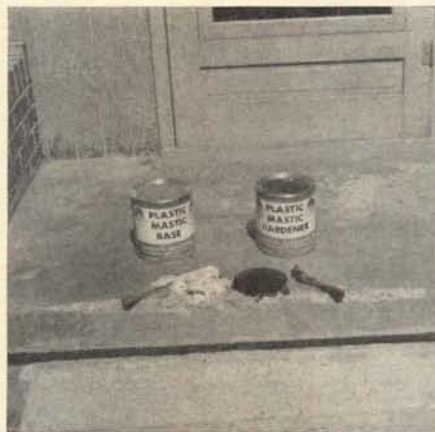
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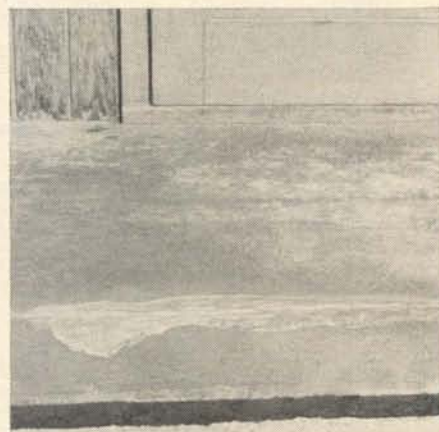
"Stick-To-Anything" Adhesive



Salt used to thaw ice on concrete slab caused edge of stoop to break away. Sharp edge of slab is difficult to repair with most materials.



White-colored base, black hardener are mixed 50-50 to uniform gray color, then applied over broken concrete, smoothed with moistened sponge.



After Plastic Mastic set up, the material was sanded smooth, small irregularities filled with more mastic to produce uniform surface.

APPLY IT OVER BROKEN CONCRETE, patch a damaged tree, put together a shattered birdbath, stick a mailbox (metal) to a brick wall, replace a loose brick in a planter box and even cement together the broken halves of a plastic knob from an automatic washer. All these jobs were done with one adhesive, called "Plastic Mastic." Technically an epoxy-polymid resin, Plastic Mastic requires the mixing together of a "base" and a "hardener," as in the case with many modern epoxy-based adhesives. However, the proportions for PM are: "approximately" equal parts. You can change percentages to 40-60 either way, and your only problem is that the material will

take longer to set up. With the proper 50-50 mix the cement sets up in a couple of hours at room temperature. With the addition of heat the mastic will harden in minutes. It can be sawed, drilled, filed and sanded when set. Before setting, the material can be cleaned from tools with plain water. A wet plastic sponge, or your hand dipped in water, can be used to smooth and shape the material while it is being applied.

To make a table with a flush door, apply four spots of Plastic Mastic to the door surface and force four floor flanges into the mastic. When the mastic has set up, screw four lengths of pipe, fitted with caps, into the flanges to provide legs and the table

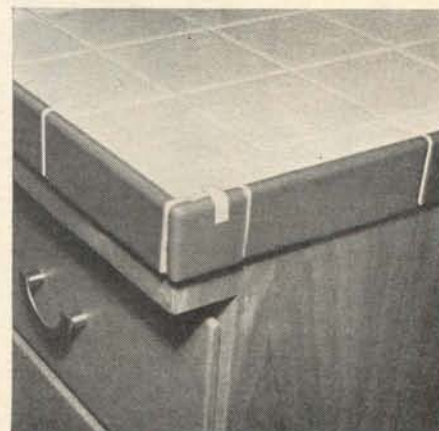
is complete. The same method can be used to attach pipe railings to a concrete deck or porch. As an experiment, the mastic was used to repair a leaking automobile muffler (a temporary job, of course). Ceramic tiles that loosen on vertical surfaces can be replaced by holding the tile with cellulose tape until the mastic sets. One job done along the lines of tiling, was the cementing of glass mosaic tiles to a wooden table top. Enough mastic was used so that it was forced up between the tiles, providing a "grout" as well as adhesive. It was smoothed flush with the tile surface. For information, write Williamson Adhesives, Inc., 8220 Kimball Ave., Skokie, Ill. Δ



Done mostly as an experiment, this fired-clay birdbath was assembled as shown, proved water-tight. It was sanded smooth and painted.



Insect-damaged area in tree was chiseled out, sprayed with insecticide, then "wound" was sealed with application of versatile mastic.



Cellulose tape holds ceramic tile in place on cabinet until Plastic Mastic sets up. Mastic was forced out, smoothed for grout lines.

Vinyl Countertop Material

Photo courtesy Armstrong Cork Co.



No seam is required between countertop and backsplash when new vinyl material is used.

EXTREMELY FLEXIBLE, a new type of counter surfacing material can be installed between the countertop and backsplash with no seam. The material also is fine for wall coverings, table top covering and shelf lining. It can be installed by do-it-yourselfers, as well as professionals, and is available in sheets 30 and 42 in. and 6 ft. wide. It is made with a special, flexible backing that is resistant to the alkaline moisture often encountered on sink tops and around shower enclosures. Color-coordinated with certain patterns of vinyl sheet flooring, the material will help redecorate a kitchen or bath in one color scheme. Four patterns are available, beige, white, green and mother-of-pearl, providing a 3-dimensional appearance. △ △

IN THE NEXT ISSUE . . .

Christmas Gift Projects

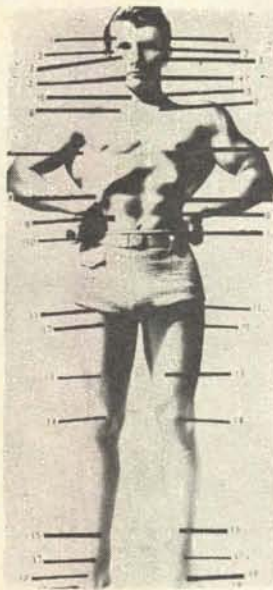
Toy Traffic Light
Doll Trundle Beds
Whale Toy Chest
Rocking Rocket Plane

For the Workshop

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Repairing Shaky Bannisters

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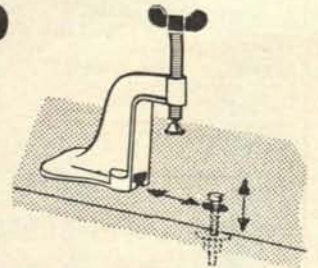
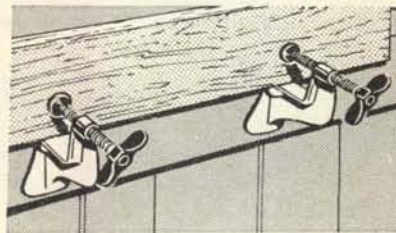
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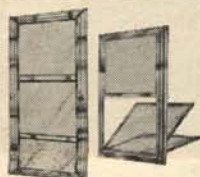
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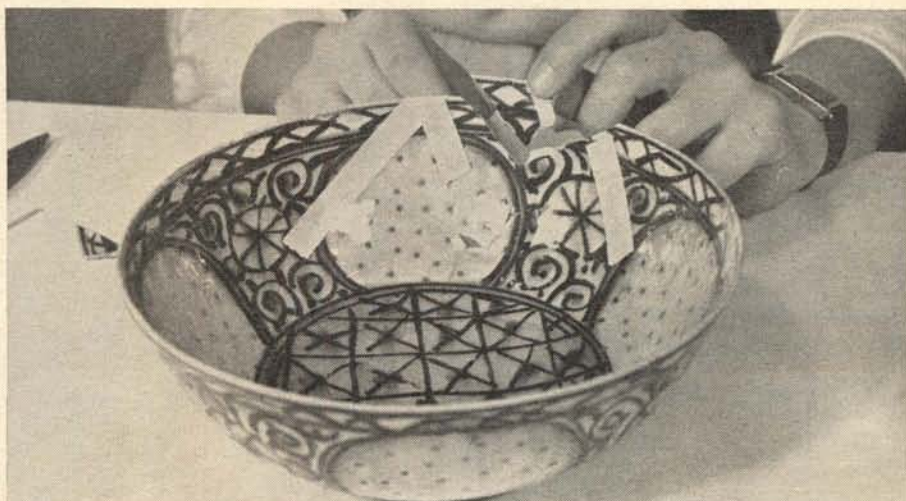
China mending calls for attention to details, like cleaning broken pieces. Cecille Barnett, who has made a career of china repair, washes edges with acetone.

How To Mend China

RALPH TREVES

PORCELAIN AND CHINA BOWLS, figures, ash trays and the like can be repaired satisfactorily if the broken pieces are quite large. If the pattern on an object is simple, you can re-touch cemented lines with pottery glaze to hide them under the pattern.

Where small chips are missing, spaces may be filled with dental porcelain cement or low-temperature-firing clay, then painted over. Clear cellulose cement (du Pont All-Purpose, LePage Mender, Sealall, Franklin's Household, etc.) has con-

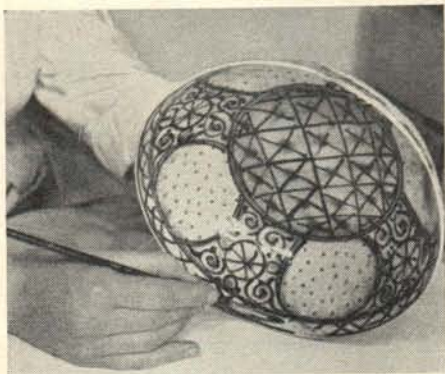


As each broken part is fitted and cemented into place, it is held with strips of masking tape on both sides. Parts must be pressed tightly in place so lines of breaks are reduced to absolute minimum.



Assembled bowl is criss-crossed with additional strips of tape or rubber bands to provide firm support until the cement sets firmly.

siderable strength, shock and handling resistance and will stand up fairly well in luke-warm water for washing. It is ideal for home repair of china and porcelain. Acetone is used to clean the edges of broken pieces to assure a good bond, then cement is applied to both edges with a wooden spatula. Hold the piece for a moment until the cement becomes "tacky," then press into place. Wipe off excess cement with a facial tissue, then apply $\frac{3}{4}$ -in. masking tape to both sides of the break. Cementing is best done all at one time. After you have assembled an object, the cement will still be slightly flexible so that the item can be reshaped slightly. Let the mended item stand untouched for at least 24 hr. before removing the tape. Scrape off any hardened cement on the surface before retouching with glazing colors. Use the type that fires in an oven at about 300 deg. It is available at art-supply stores. A more perfect job of mending is obtained by spraying color glaze along the mended cracks, the areas on either side being masked with tape. The glaze must be "feathered" along both sides uniformly to blend with the original glaze. It is important, too, to mix the color skillfully to blend with the original. All materials mentioned can be obtained at art-supply or hobby shops. $\Delta \Delta$



Hardened cement on surface is scraped off or ground down with hand grinder. Lines are retouched with low-temperature glazing color.

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WORKBENCH

RESEARCH DEPARTMENT

Each issue in this column we will choose questions on home and shop subjects from letters sent to us. Only those questions which have wide ap-

peal will be answered here. Questions on specialized subjects will be answered by individual letter from the Research Editor's desk.

Research Dept.:

I made some book shelves of plywood to be mounted on the new adjustable metal brackets. I rounded the corners of these and finished the edges and flat surfaces with enamel. But the finish was unsatisfactory, even after the application of several coats of enamel. The edges absorbed the finishing material almost as fast as I could apply it and are still rough and unsightly with several openings where the inner plys of the plywood do not meet closely. On the surfaces the grain still shows through several coats of enamel. What does one do to get a good, smooth finish on the edges of plywood?—S. T., Mass.



Dear Mr. S. T.:

We assume you're referring to fir plywood and that you have applied the finishing material to both the edges and flat surfaces without filling the end grain and using a suitable sealer under the enamel on the flat surfaces. With so many coats of enamel already applied it's going to take considerable work and time to get the good finish you appear to want. You could have easily plugged the openings in the plys by simply cutting small wedge-shaped pieces to a long taper and then driving

these into the openings and trimming off flush. This still can be done. From there on you can do two things, your choice. You can sand most of the enamel off the edges to get them fairly smooth and even again, and then apply a filler or a quick-drying putty which is available from your paint dealer. Allow this to harden and then sand smooth. This surface will then take enamel without undue absorption. There's not much you can do with the flat surfaces except to apply additional coats of enamel until the finish builds sufficiently to conceal the pronounced graining of the plywood. Or, as a second procedure, you can take off the enamel with a remover and start all over again. After the remover has worked sufficiently, scrape off the softened finish, allow to dry and then give surfaces and edges a thorough sanding. On the edges sand back to the bare wood and be sure the edges are square. If desired, the edges can be planed to square up. Then finish the edges with a special tape-type veneer which is specially made for the purpose. Sand the edges of the veneer flush with the surfaces. Then apply an enamel undercoater. Do not use a sealer because there will be residues of the enamel still in the wood and the plywood sealer will not take well. Sand the first coat of undercoater lightly and apply a second coat. Allow to dry and sand lightly. Then follow with two or more coats of the final finishing enamel.

Dear Research Editor:

We moved into our new home two years ago and the first year our full basement was bone-dry—no seepage or even any indication of dampness anywhere on floor or walls. Now, however, we are getting an almost constant seepage along two of the walls at the floor line. Also, two tiny cracks have appeared in the floor and a small amount of water comes through these, enough to keep a small area of the floor wet constantly. Now, one other thing that

puzzles me: In my yard, about 10 ft. from one side of the house, there is a wet spot, that is, the soil under the new grass is constantly wet. My contractor has tried several ways of curing the situation, but nothing works. He has checked all the drains and they are open. There are no breaks in the water line from the street (unpaved) to the house. Now he says he is as puzzled as I am. Can you tell us what might be causing this unusual situation?—C. N., Ohio.



Dear Mr. C. N.:

It's rather hard for us to say positively, at such long range. But we'll risk a guess. What you say in your letter leads us to conclude that your home is located in a new subdivision; also we can infer from your description of the problem that the condition of dampness remains fairly constant, that is, it is not necessarily affected by heavy rainfall, neither does it change seasonally. In this case we are going to guess—and it should be understood that it's only a guess—that your trouble is due either to a broken and clogged farm tile or a natural spring. Add to this one other possibility, a little more remote, but still a possible cause: If water has been impounded in the near vicinity for any reason, this may have had the effect of raising the subsurface water table sufficiently to cause hydrostatic pressure to develop under your basement floor. Such a condition can only result in forcing seepage of water through tiny voids in the walls and floor of your basement. If you're located in a country subdivision on what was once farm land, it would seem that a clogged farm tile—possibly broken and clogged during excavating operations—is a most likely cause. These lines were laid with open tiles, that is, they consisted of straight clay tiles laid end to end. If the line of tiles is clogged at any point short of the outlet and the flow of water stopped entirely the tile line will fill and any additional flow of water will naturally force the flow into the ground in the

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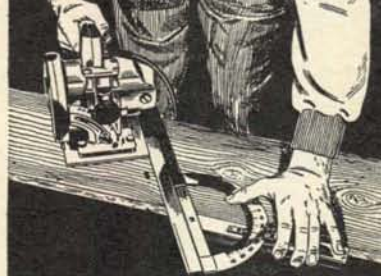


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adjacent subsurface area. If the tile line is long and drains a fairly large area, this can cause considerable pressure to develop—enough to force water into a basement, or even to the surface near your house wall, as you have described. What to do is something else again. We know of one instance where it was necessary to excavate to a farm tile and lay a new line around the basement and reconnect the new tile to the original line in order to remedy the trouble. However, in your case the first thing to do is determine what is causing the trouble, then steps can be taken to remedy it. Also, it may be possible to waterproof the basement walls and overfloor the present basement floor with about 2 1/2-3 in. of new concrete laid over a waterproof membrane with waterproof expansion joints at all points where the floor joins the walls. There are waterproofers which can be applied to the walls which will withstand considerable pressure. But the first step is to find out what is causing the seepage, then take it from there.



Dear Research Editor:

My home is about 30 years old and was originally stuccoed. Now, of course, the stucco is coated with dust and grime, especially up under the eaves, or cornices, which are rather wide, and is very unsightly. Below, where the rain hits the wall, it is cleaner but still is rather badly streaked. It seems to be in good condition generally, but there are several places where the stucco coat seems to have bulged, or pulled away from the wall. It was originally a rather light gray color. I'd like to clean it, repair the bulges and coat it with something that would brighten it up, make it look clean and new. Can you tell me what I should do?—B. G., Calif.

Dear Mr. B. G.:

Judging from your description the stucco is in rather remarkably good condition after 30 years' service. Properly applied, stucco is a durable building material. However, the bulges you


describe usually are caused by moisture seeping through a crack to a point under the stucco coating and breaking the bond. Expansion then causes the coating to bulge as you describe. The first step is to have these damaged areas repaired with a stucco mix which matches the original in color and surface texture as nearly as possible. In this it will pay you well to have the work done by a contractor experienced in this type of work. When this has been done the walls should be hosed down thoroughly to remove the dust and other grime which has accumulated. Before you wet the surface, however, it will be a good idea to go over the walls and calk any cracks along the window trim, also the door trim, where the stucco joins the wood. Cracks often develop at these points. Be sure to force the calking material sufficiently to fill the opening entirely, as otherwise it will soon loosen and drop out or pull away from the edges. It will pay to take time to do a thorough job. Then turn the hose full on and adjust the nozzle to give a rather fine spray. Use a ladder to reach the high places. Begin at the top of the walls and work down. In some places, especially under the cornices, it may be necessary to scrub the surface with a stiff-bristle brush to loosen the dirt so that it will wash away. When you get through washing down the walls it will be up to you to decide whether to paint them or not. We could not decide at such long range, but it is true that stucco walls in some localities appear almost new after a thorough washing down. But if you do decide to paint the stucco, be sure to use an approved stucco paint which is especially prepared for the purpose. Prepared stucco paint comes as a dry powder and is mixed with water to form a creamy solution. This can be sprayed on or applied with a brush. When applied by either method it is designed to bond to the surface and when dry it is waterproof. If you apply this paint yourself, be sure—and we repeat, be sure—to follow the mixing instructions in all details. The method of mixing and especially the amount of water used for each batch is quite critical. To assure success, the instructions must be followed in every detail.

Research Dept.:

There is available to me for the hauling a quantity of hardwood sawdust which I plan to use as insulation in the walls of my new home. Some of it was originally used in an ice-house and portions of this will be damp and, of course, will have to be dried out before using. But now I'm told by friends that this sawdust will not be suitable for insulation in the walls of a house. They say it will gather moisture, will remain wet,

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and also is an invitation to all manner of insects. Buy why? It served as insulation in the icehouse, why not in the walls of my house?—C. H., Me.



Dear Mr. C. H.:

Your friends gave you good advice. In planning to use sawdust as insulation in the walls of a home you are overlooking several variations in conditions between those existing in walls of a heated house and those in the icehouse. Also, to understand why it is not advisable to use sawdust as insulation one must know how and why moisture condenses in the walls. In older, uninsulated homes of conventional wall construction, moisture from the air in the rooms (not from the outside, as so many suppose) passes through the walls to the outside to the colder, drier air. It is forced through the walls by what is known as vapor pressure, and it passes through in so short a time that it does not normally condense at some point in the walls. But, when an insulating material is placed in the walls without a vapor barrier on the room side, the passage of the warm, moisture-laden air is slowed by the cellular structure of the insulating material. This is why insulation is effective in reducing heat loss to the outside. But, when the passage of warm air is slowed down appreciably it is cooled to the dew point within the wall and the moisture it contains condenses, usually in the insulating material itself. Sawdust in itself is effective insulating material but it should not be used as insulation in the walls of a home for this reason. Also, it may attract insects, as you have been told, and it tends to settle and pack tightly in time. If you are building a new home by all means install approved insulating materials in the walls and ceilings; this can be either of the blanket or batt type but it should be faced with a vapor barrier. When installing, be sure to follow installation instructions in all details.



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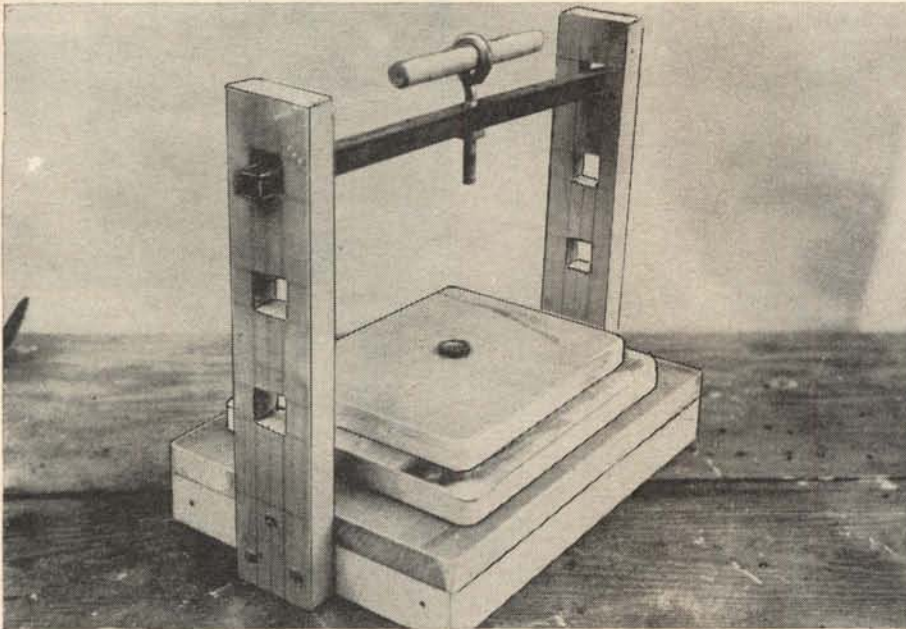
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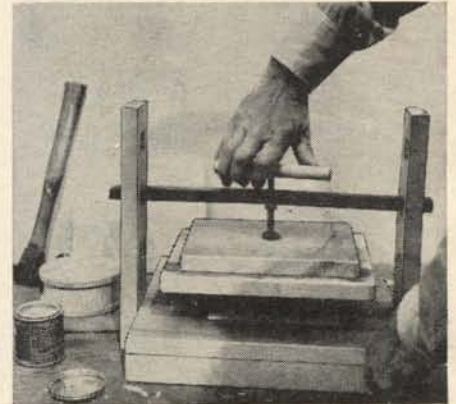
Veneer Press

DICK HUTCHINSON



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When there is a chance that you will run out of thread on the clamp screw, use a block of wood as a spacer, as shown here.

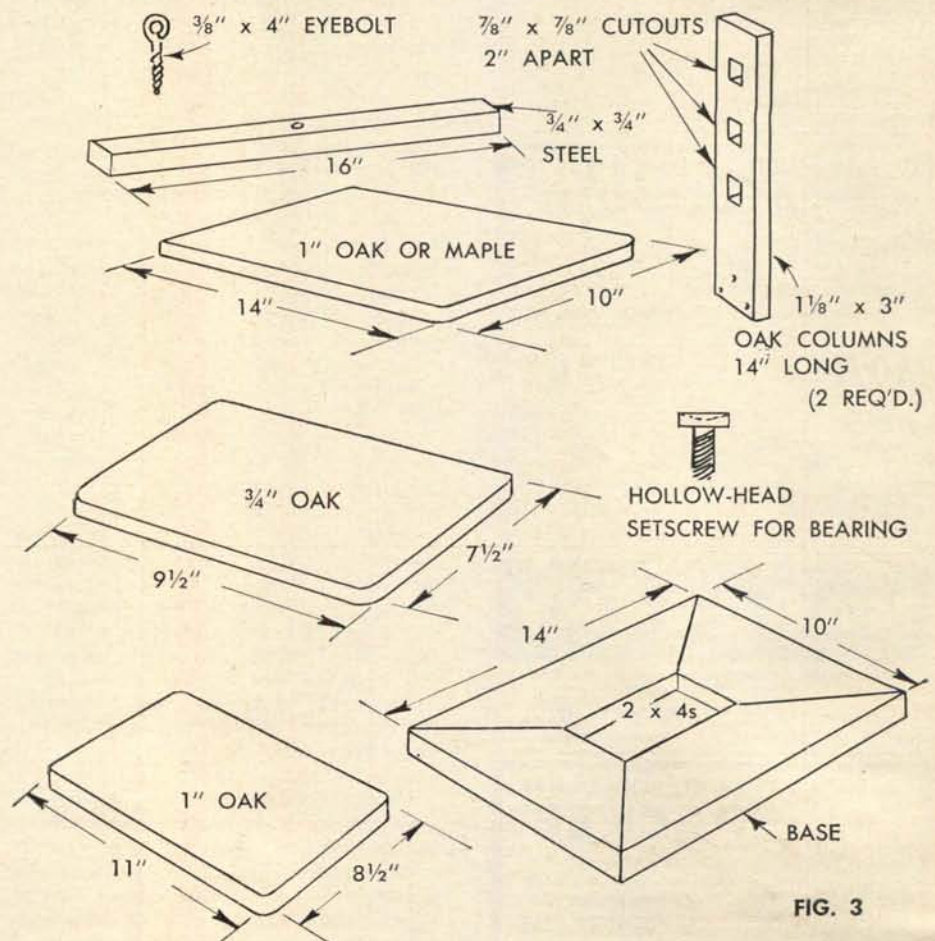


WHILE DESIGNED PRIMARILY for the application of hardwood veneers to plywoods and soft woods to produce the appearance of expensive material, this veneer press doubles as a versatile clamp for the hobbyist and home craftsman. If bookbinding is one of your hobbies, the clamp is ideal for holding a bound book while the cement sets. All sorts of jobs requiring clamping can be held by the press while adhesives are setting. A sheet of wax paper above and below the work will prevent it from being cemented to the faces of the press by excess adhesive forced out of joints. If linoleum-block cutting is one of your interests, the press makes an excellent "printing press" for making impressions with the blocks.

Start construction of the press by cutting four lengths of 2 x 4 for the frame of the base, mitering the corners as indicated. The platform that is glued and screwed to the frame is cut from 1-in. oak or maple. Screw holes are countersunk. The pressure block consists of a piece of $\frac{3}{4}$ -in. and a piece of 1-in. oak, glued and screwed together, with the grain of the two pieces at right angles to each other to add strength. A hollow-head set screw is cemented into a counterbored hole in the center of the pressure block to provide a thrust bearing against which the clamp screw presses. The clamp screw is a $\frac{3}{8}$ -in.-dia. eyebolt from 4 to 6 in. long. A 6-in. length of hardwood dowel is used to turn the screw. A solid-steel bar $\frac{3}{4}$ x $\frac{3}{4}$ x16 in. is used for the clamp bar. A hole can be drilled and tapped to accept the eyebolt, or a nut can be welded to the underside of the bar,

as on the original, after drilling a clearance hole. Two columns in which the clamp bar are supported are oak, cut from $1\frac{1}{2}$ x 3-in. stock. $\frac{7}{8}$ -in.-sq. holes are spaced 2 in. apart to accommodate the clamp bar.

If you are interested in a more complicated, and larger, veneer press, plans and parts are available from Albert Constantine and Son, 2050 Eastchester Rd., New York 61, N. Y. $\Delta \Delta$



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MORE EXOTIC than the usual paint-by-number canvases, these paintings are brilliant splashes of color on black backgrounds. A group of four of the paintings adds that touch of seasoning to any room. Each of the kits contains four paintings, in two sizes. Framing masks, but not frames, are included in each kit and the masks are designed so the finished pictures can be mounted and hung without frames. Brushes, brush cleaner, and 12 different oil colors as well as instructions, complete each kit. Can be purchased in hobby, department, chain and drugstores where Palmer-Pann Corp. products are sold.

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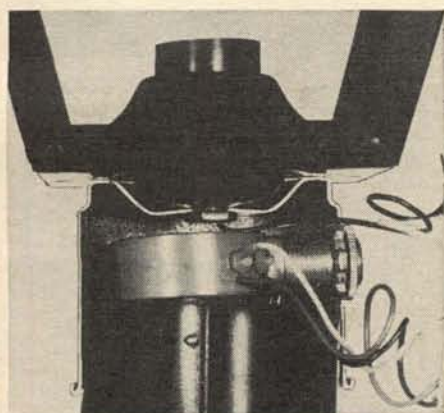
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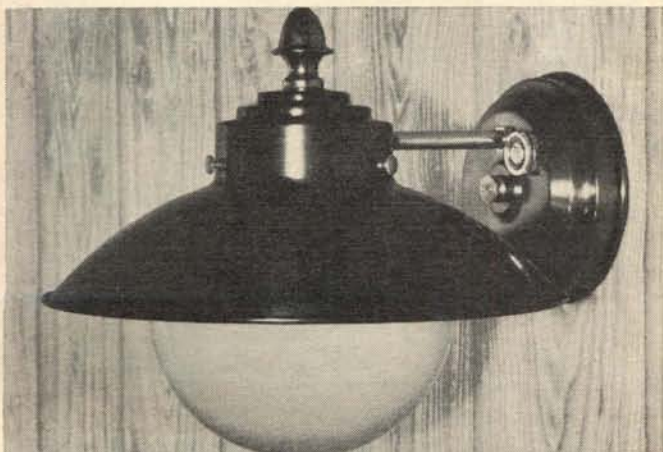
Light-Controlled Switch



1. Unobtrusive lens of Lightguard is fitted in lower portion of this post lamp to turn it on at dusk, off at dawn.



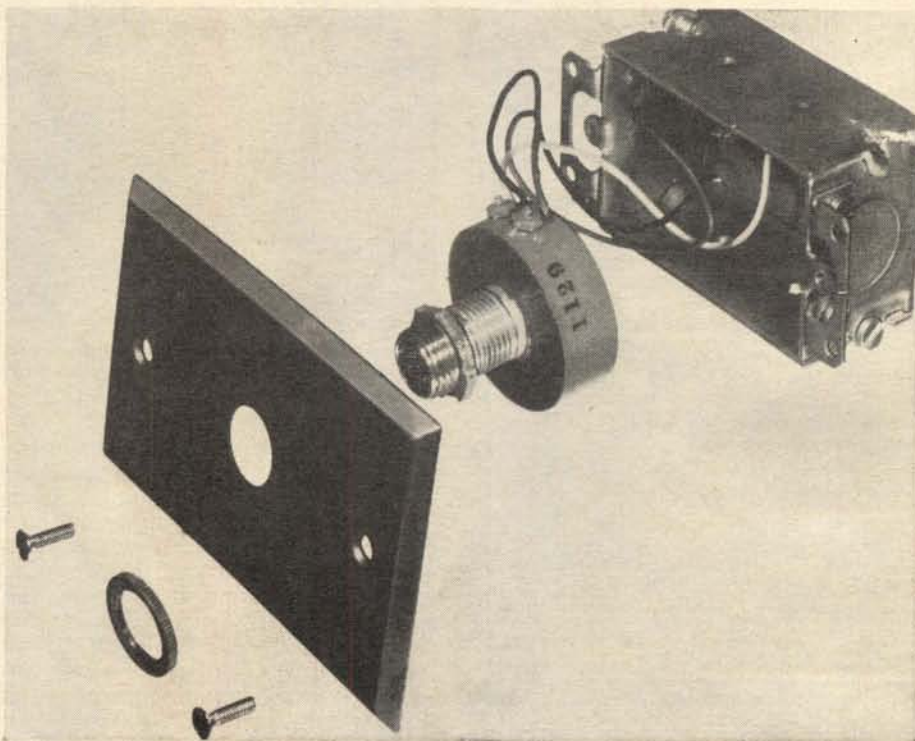
2. Cross section of post lamp shows how Lightguard fits neatly between lamp and top of supporting post without interference.



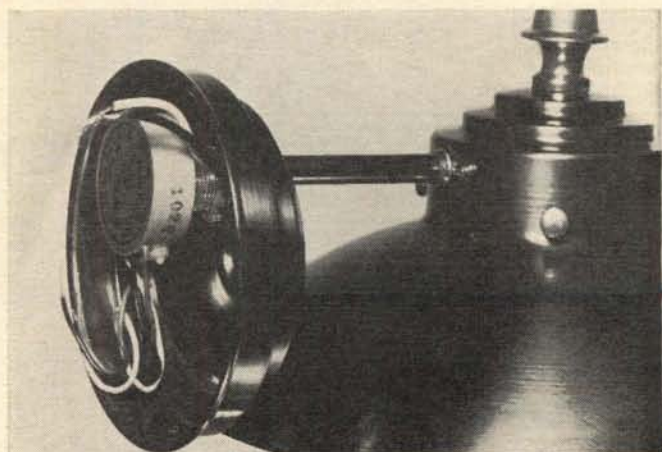
4. Still another installation is in wall-mounted light, such as used beside entrance doors and adjacent to patios. Large shade of this lamp is particularly effective in keeping light away from Lightguard unit.

NO NEED to come home to a dark house after being away all day when a light-sensitive switch can be installed to control any light inside or out. Called the Lightguard, the unit requires only that an 11/16 in. hole be punched or drilled in a light fixture, Figs. 1, 2, 4 and 5 to accommodate it and the wires hooked up. The "hot" wire from the house, which should be the black one, is connected to the black of the Lightguard, the red of the Lightguard is connected to the black wire of the light, and all neutral, or white, wires

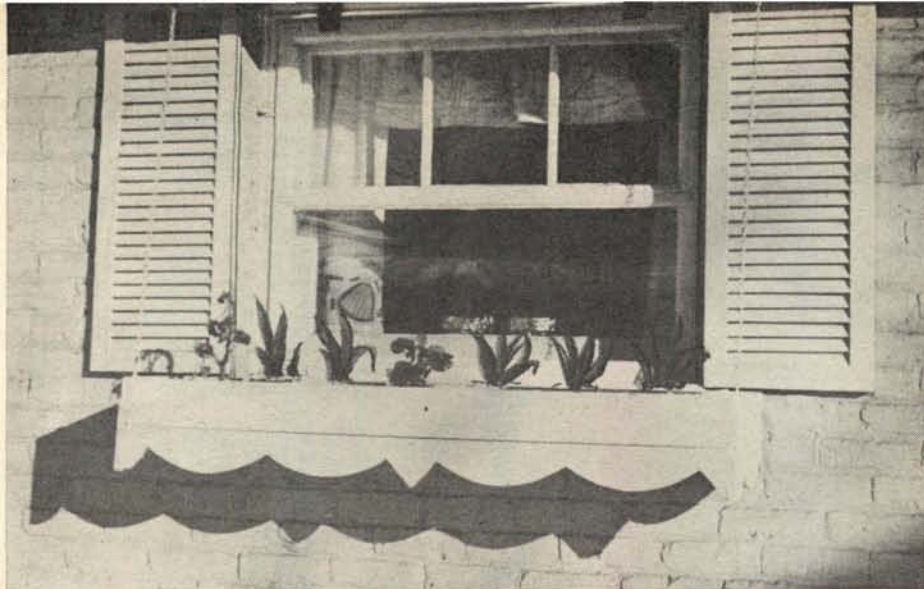
are connected together. The light-sensitive unit should face approximately north, and there should be a difference of 10 candlepower between dark and daylight. The unit should be shielded so light from the lamp it controls does not fall on it. Where these conditions cannot be met, the unit can be placed in a box, Fig. 3, and located where proper light conditions will actuate it, so it will control a light. For information write: Schacht Electronic Mfg. Co., 1213 St. Emanuel, Houston 3, Texas. $\Delta \Delta$



3. Ideal for areas such as carports, when the light to be controlled is not where sunlight reaches it, this installation in receptacle box can be located on an outside wall. Plate used is stainless steel telephone type with single hole in center.



5. View of back of shell on wall-mounted light shows how Lightguard unit is fitted easily inside. Compact size of the unit permits it to be installed in all but the very smallest of lights.

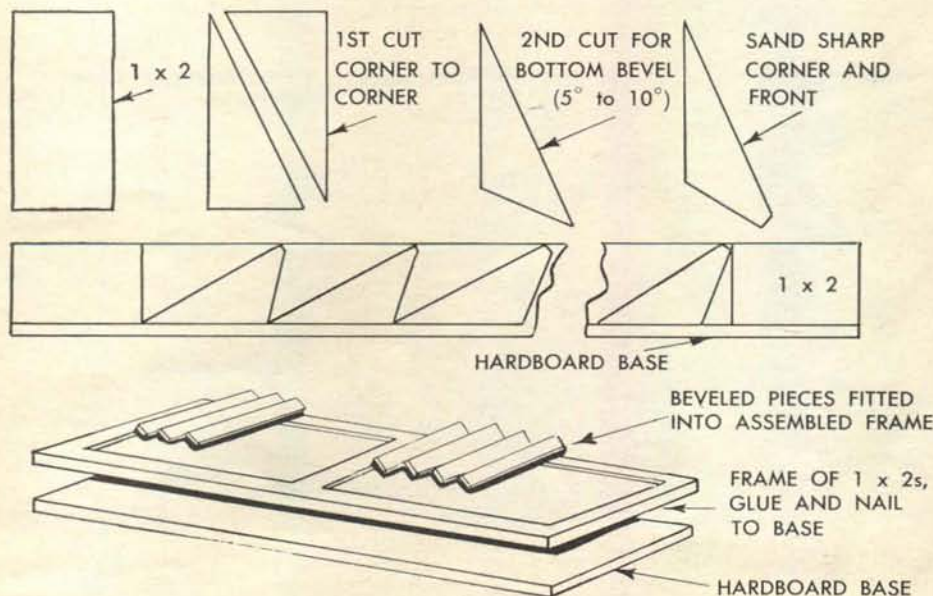


Angled edges of fixed strips glued and nailed to hardboard backing inside frame of 1 x 2 lumber have deep shadow line, give the appearance of separately fitted louvers. Each shutter is fastened solidly to the wall of the house with screw anchors.

“No-Louver” Window Shutters

CUTTING AND FITTING individual louvers for a window shutter is a tedious, time-consuming job. These shutters, although they have the look of the genuine louvered units, actually are a frame of 1 x 2 stock backed with a sheet of hardboard. The “louvers” are cut from 1 x 2 stock as indicated in the sketch. The first step is to set a table or radial-arm saw to cut the stock diagonally from corner to corner. The second cut is on the narrow edge of the resulting triangle at an angle of from 5 to 10 deg. This latter angle assures that the louvers will shed water, and also provides a deeper shadow line. Because the lower edge of the triangle now is a knife edge, it should be sanded or

planed to make a narrow flat, as indicated in the last diagram. If the windows to be fitted with shutters are fairly high and narrow, a cross-piece can be located at the half-way point in the shutter frame. This cross-piece provides a visual break, tending to make the shutter, and window, look shorter than they actually are. Thoroughly paint the shutter frame and hardboard back before installing the louvers. For an unusual touch, before attaching the louvers, paint their lower edges a darker, contrasting color. This will deepen the shadow line, and add a touch of color. The inner edges of the 1 x 2 frame also could be painted the same contrasting color. △ △



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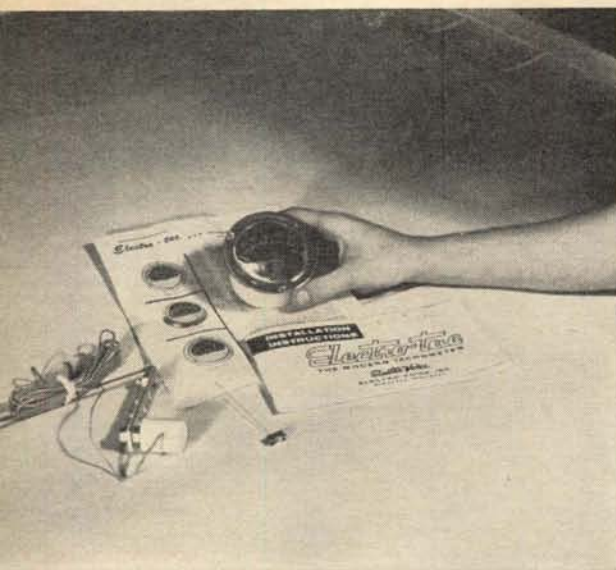
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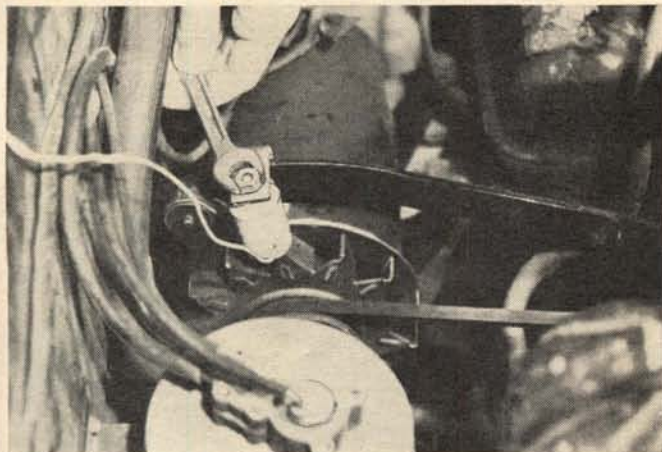
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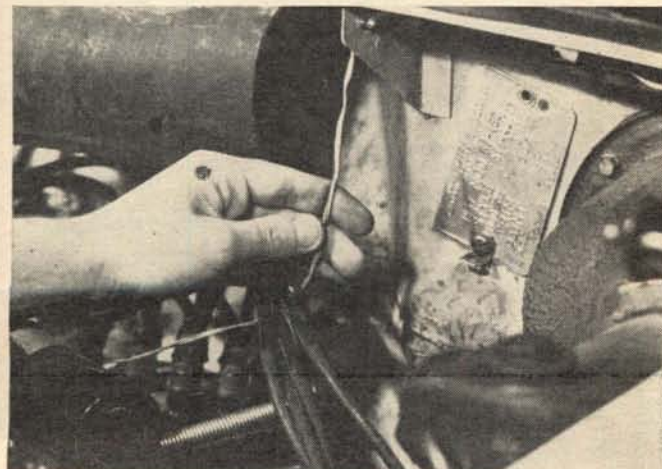


Family - Car Tachometer

BESIDES SIMPLY INDICATING how many revolutions per minute your engine is rotating, a tachometer will tell a number of other factors about the condition of the engine, and also how to get maximum efficiency. A cold engine idles fast, due to the mechanism of the automatic choke. If the idle speed does not reduce when the engine is warm, it indicates that the carburetor needs adjustment or repair. Every automatic transmission shifts at



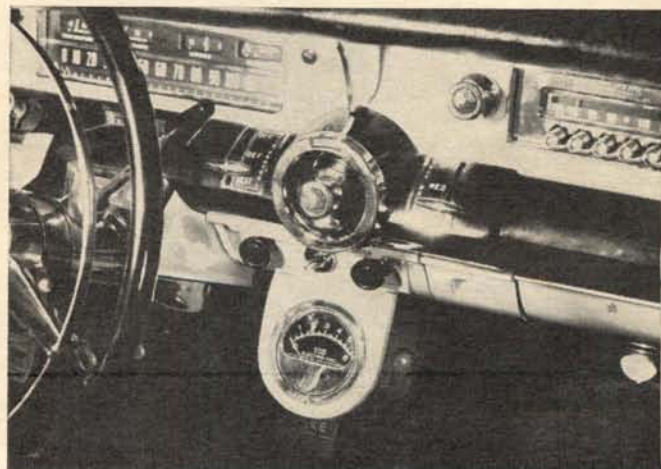
Electro-coil is attached to generator bracket with its own strap. Latter is bent easily to position the coil the required $\frac{1}{8}$ in. distance from the cooling fan of the generator, which actuates the unit.



Lead wire from electro-coil is run through existing wiring brackets to keep it clear of engine, then through fire wall and into driver's compartment where it is connected to the indicator head mounted on dash.

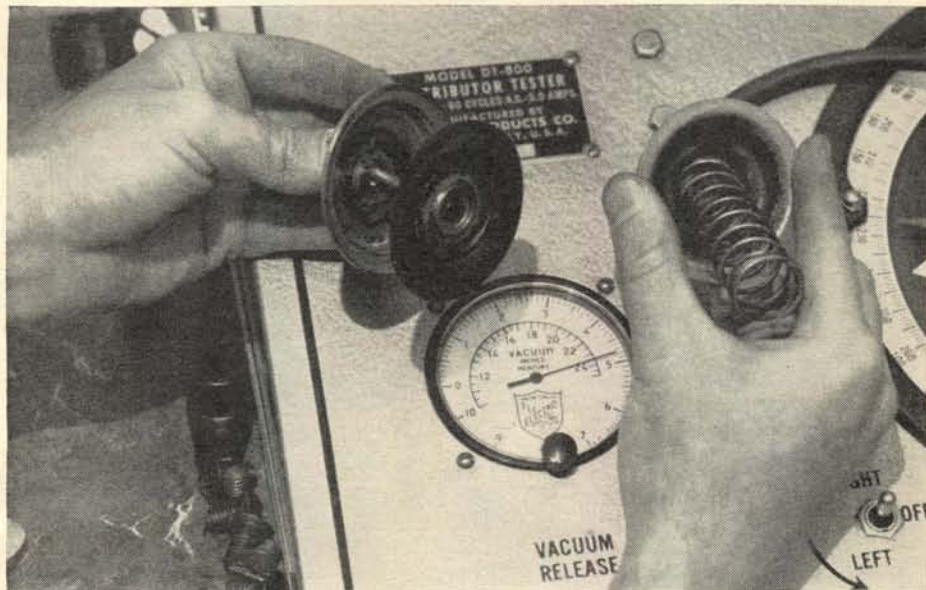
certain engine r.p.m.'s under full or part-throttle operation. Changes from these specified r.p.m.'s shows the transmission needs checking. If the needle on the tach' gauge jumps, the engine is missing and should be tuned or checked. Any engine has an r.p.m. range in which it is most efficient, getting the best mileage. Your tach will tell you this information.

In the past, most tachometers required relatively complicated installations, being connected to the ignition system; sometimes effecting the system adversely. Now available is the Electro-Tac, manufactured by Electro-Voice of Buchanan, Mich. This unit has no connection to the electrical system of the car, other than a light in the indicator head. A small electro-coil is held by a clamp about $\frac{1}{8}$ in. away from the cooling fan of the generator. The blades of the fan passing through the magnetic field of the coil produce a voltage, which is interpreted as engine r.p.m. on an indicator dial that can be flush-mounted in the instrument panel, clamped below it (in a homemade panel, as shown, when desired) or in a bullet-shaped shroud that is clamped to the steering column. Furnished with the tachometer is a tuning reed. The reed is held on the steering column, the engine is slowly accelerated until the reed vibrates at its maximum, then the indicator is adjusted to read 2,000 r.p.m. The number of cylinders, battery voltage, ground polarity make no difference, so that one unit fits all situations; another reason that the Electro-Tac is ideal for the do-it-yourself mechanic or mechanically-inclined car owner who is interested in engine efficiency. $\Delta \Delta$



In this installation, small plywood panel was made and attached to lower edge of instrument panel, light wiring run to light switch. Another model has shroud for indicator head that clamps to the steering column.

Distributor Diaphragm Controls Economy



This distributor diaphragm was not porous or ruptured, which is the usual case when a distributor-advance problem occurs, but was contaminated on one side.

GOOD THROTTLE RESPONSE AND maximum fuel economy depend to a large extent on whether the distributor vacuum diaphragm assembly provides the proper spark advance in relation to the density of the fuel charge. Modern V8s traveling at highway speeds commonly pull 15 in. of manifold vacuum hour after hour, according to the Champion Spark Plug Co. This vacuum acting on the distributor advances the spark past normal centrifugal limits, producing maximum economy. In the photograph is shown a diaphragm that required a pull of 24 in. of mercury just to start advancing the spark; the result was poor gasoline mileage. Examination of the diaphragm showed that it was not porous or ruptured, but was severely contami-

nated on the atmospheric side of the diaphragm chamber, which produced a sticking effect so that it would not move until 24 in. of vacuum were applied.

Whenever you tune up your car, or have it tuned, make sure the vacuum diaphragm is working properly. If a distributor tester with vacuum attachment is not available, disconnect the vacuum line to the diaphragm chamber, pull the distributor plate around to advance it, then place your wetted finger over the vacuum-line opening on the diaphragm housing. If the plate snaps back, or creeps back to its no-advance position, there is a leak in the diaphragm and it should be replaced immediately. $\Delta \Delta$

Translucent Garage Doors



Aluminum and fiber glass are combined in this garage door to produce lightweight unit that illuminates garage with daylight.

VARIOUS COLORS of translucent fiberglass panels, mounted in aluminum frames are used for this garage door. Light in weight and maintenance free, the door opens and closes effortlessly. The big advantage of the unit is that the translucent material allows diffused light to enter and illuminate the garage. The door can be installed by a homeowner. For information, write to Filon Plastics Corp., 333 N. Van Ness Ave., Hawthorne, Calif.

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a trailer and pick up the unit yourself. Because of the weight, freight costs also are a factor that should be investigated. For further information on this fireplace that can be disassembled and moved with other furnishing, write to: Irion's Concrete Block Co., 600 Van Buren Street, Peoria, Ill. △ △



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Photo courtesy Bathroom Products Div., F. H. Lawson Co.



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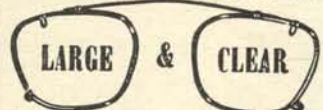
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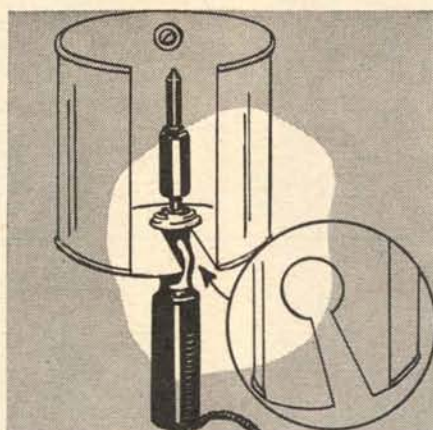
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Soldering-Iron Holder



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Daniel Bousha, Jackson, Mich.

"Pump-Powered" Sink Drain

Drainage for a basement sink that is below sewer level can be provided by installing a submersible sump pump in a plastic trash container as shown. Rubber hose or flexible-plastic pipe is used for both the sink drain into the container and the pump outlet that is led to an overhead sewer line.

Wayne Floyd, Fayetteville, Tenn.

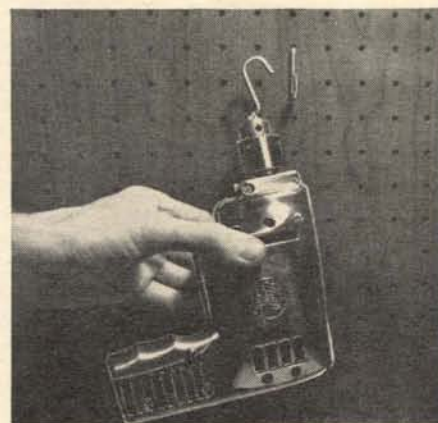


WORKBENCH SHOP TIPS

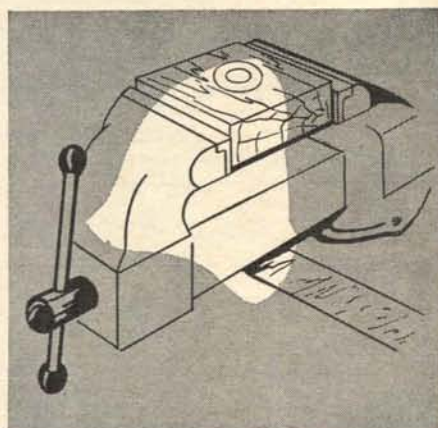
Hanging A Drill Motor

Chuck a spare toolboard hanger in your drill motor and hang it on a convenient hook. A bent wire or nail will do if you have no hanger.

John A. Comstock, Wellsboro, Pa.



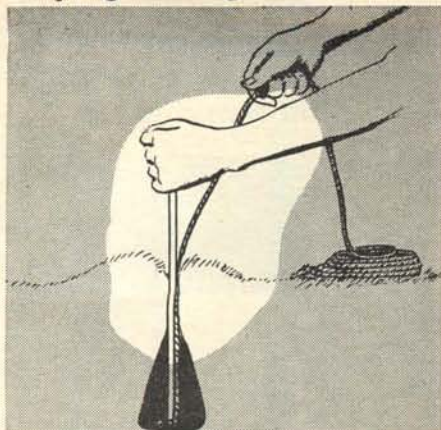
Holding Thin Workpieces



To hold washers and other thin items that are to be surface-filed to reduce their thickness, "clamp" them in a block of wood. The workpiece is held against the wood and both are squeezed between the jaws of a vise until the workpiece is flush. Wood particles picked up by the file are easily brushed away.

Gene Murray, Chicago.

Laying Underground Cable



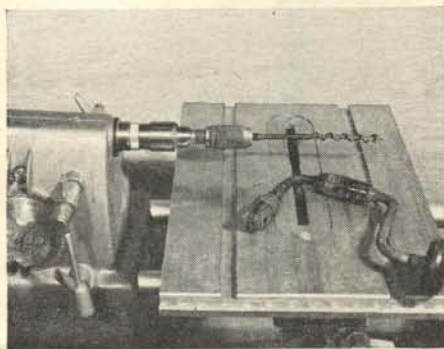
There is no need to tear up sod and dig a wide trench when installing underground cable. Instead, insert a spade along the route of the cable, moving the handle back and forth to make an X-shape cross section in the groove formed. Use a blunt-end stick to force the cable to the wide portion at the bottom of the groove. After the cable is installed, tamp down the sod on each side of the cut, which will have been forced up. Before starting the job, of course, check local ordinances to determine the required depth of buried cable. *Diane Syme, St. Paul, Minn.*

Painting Asbestos-Cement

Should you have trouble painting asbestos-cement siding or shingles, write and ask for the free booklet "Painting Asbestos-Cement Products" from the National Paint, Varnish and Lacquer Association, 1500 Rhode Island Ave., N.W., Washington 5, D. C. Booklet was prepared with cooperation of Asbestos-Cement Association.

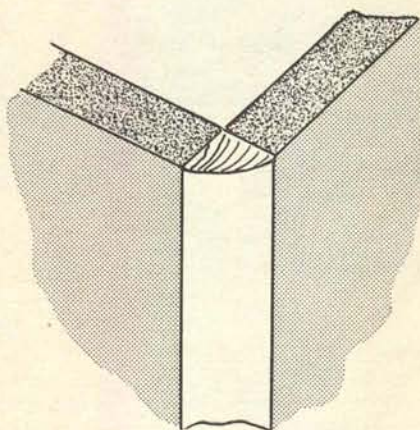
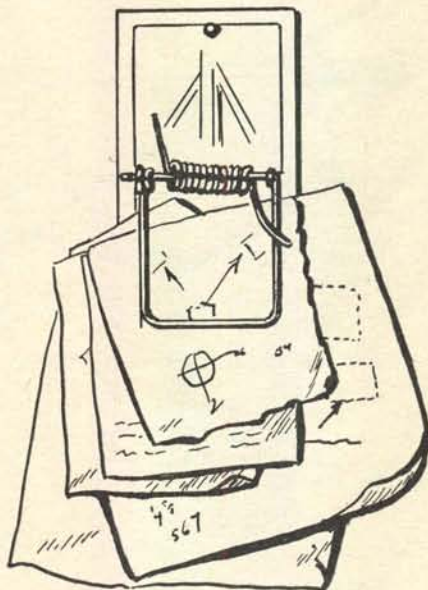
Square-Shank Bits Used In Drill Press

Removing the taper pin from a ratchet-type brace permits slipping out the chuck assembly so that it can be chucked in any drill press with a capacity of 1/2 in. or more. This stunt allows the use of square-shank bits that normally are used only in a hand brace. The drill press is run at slow speed when using these bits. The hand brace is readily reassembled when it is needed. *Floyd Schoeffel, Kingston, Wis.*



Wall Holder For Plans

An ordinary spring-type mouse trap is ideal for holding working drawings, plans or instructions so they can be read easily. Simply screw the trap directly to the wall of the workshop. For large drawings, such as those for assembling hi-fi kits, two or more traps are needed. *Ann Zawistowski, Coon Rapids, Minn.*



Hardboard Corner Trim

When paneling with 1/4-in. hardboard, 1/4-in. quarter-round molding can be used to seal and decorate outside corners. Nail the sheets flush with the framing, instead of overlapping, then nail the quarter-round in the angle formed. *Daniel Bousha, Jackson, Mich.*

Soldering-Iron Aid

Steel wool pad on your soldering-iron holder provides greater heat dissipation, prevents loss of tinning. A twist of the tip in the pad keeps the point clean. *Williams Co., London, Ohio.*

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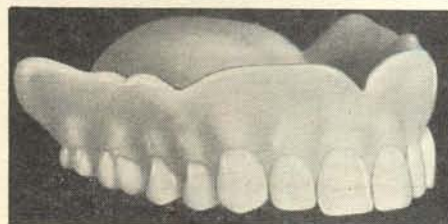
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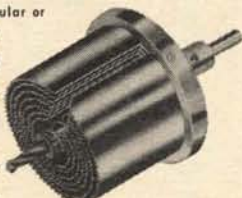
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Incl. 1/4" drill bit. No. 650. **\$7.95**

No. 652—as above but with 2 1/4" Extra Long Blades to cut thru any 2" stock. Incl. 3/8" drill bit with 1/4" shank. **\$11.95**

At your dealer or order direct on our 20-Day Money Back Guarantee. Send check, M.O. (ppd.) COD + post.

ARROW METAL PRODUCTS CO.

Dept. WB-9H, 421 West 203rd St., N. Y. 34, N. Y.

Wanted! HOME PRODUCERS

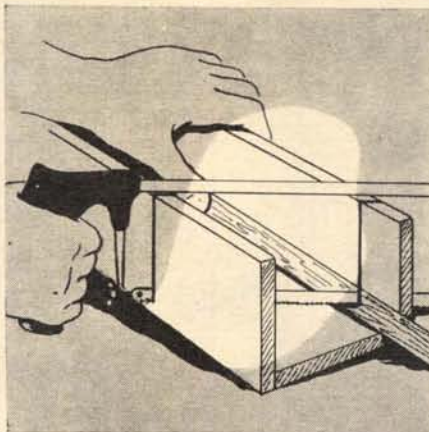


To be subcontractors. Cast plastic products for manufacturers in our Clearing House Service. Thousands of easily-made items required. Cash in at home, without previous experience. Set your own hours. Write today for FREE list of 100 most wanted items.

PLASTIC SERVICE ASSOCIATES
Dept. WB-9 East Boston 28, Mass.

WORKBENCH SHOP TIPS

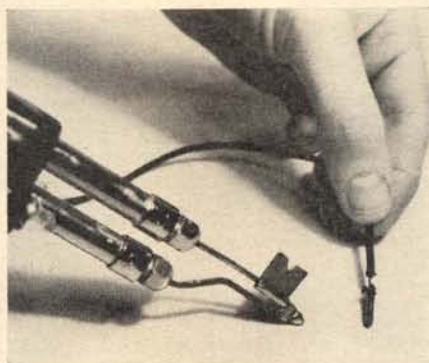
Hacksaw Cuts Miters



When cutting miters on light stock, use a hacksaw instead of a backsaw. The fine blade used in a hacksaw is much less likely to splinter and damage the wood.

Daniel Bousha, Jackson, Mich.

Electric Wire Stripper



Quick and sure is this wire stripper. A short length of light sheet metal is V-notched as indicated and wrapped around the tip of a solder gun. To strip wire, hold it against the notch and rotate it while pulling the gun trigger to heat the tip.

John A. Comstock, Wellsboro, Pa.

Many of us cut out the pages with ideas that are of particular interest to us in Workbench—and eventually they get mislaid or lost. Instead, type a few words on a small card describing those articles you plan to refer to at a future date. i.e., wood paneling, p. 24; built-ins (boys room), p. 44, etc. Staple or Scotch tape card to outside cover of issue and store away on shelf. Issues that have no card, give to a friend.

Grace Arnold, N. Y.

Paint-Masking Tip



When painting windows try this masking idea: Cut pieces of newspaper to fit the glass panes, then dip them in water. Let the paper drain until just damp, then fit against the glass. The paper will adhere nicely, giving you plenty of time to paint. The paper is removed easily when the paint is dry.

Wayne Floyd, Fayetteville, Tenn.

For Better Gluing

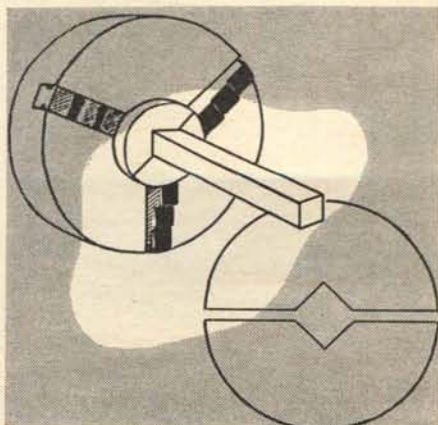
Most commercial glues can be used just as they come from the container. However, if an especially strong glue joint is required, warm the glue in a pan of water to a temperature of about 90 deg.

Mrs. Ernest Miller, Lansing, Mich.

Adapter For 3-Jaw Chuck

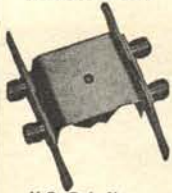
Holding bar stock in a 3-jaw chuck is no problem when this adapter is used. It is made from a 1-in. length of 2-in.-dia. cold-rolled steel. It is cut in half lengthwise and a 90-deg. V-notch is milled in each half as indicated. With this adapter in a 3-jaw chuck, various sizes of bar stock can be held securely and positioned accurately on center.

M. Robert Beasley, Jackson, Mich.



JOINTER AND PLANER BLADE—SETTING

MAGNA-SET



By employing the use of magnetism, the gage pictured in this ad is now saving the time and tempers of woodworkers in industry, home workshops and Vocational Schools throughout the U.S.A.

NOTE THESE ADVANTAGES

An expert mechanic is not required for setting blades. With Magna-Set, anyone can do it!

The necessity of tapping, prying and re-adjusting is entirely eliminated!

Use of Magna-Set constitutes a saving on material spoilage and excessive and improper blade wear!

Send Post Card for information to:
MAGNA-SET COMPANY Dept. WB
632 NEW HAVEN AVE., MILFORD, CONN.

U.S. Pat. No.
2,589,865

If You CHANGE Your ADDRESS . . .

- ▶ Please give us 6 weeks advance notice.
- ▶ Include address label from last issue received or code numbers from address label.
- ▶ Address your notice to:

Change of Address Dept.

WORKBENCH

Handcraft Bldg. • Kansas City 11, Mo.

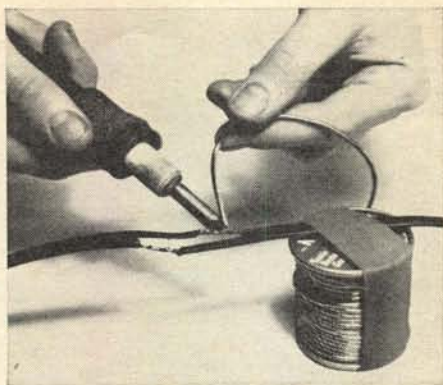
How to Enlarge Squared Patterns and Designs

Number the outside squares of the pattern both horizontally and vertically. Now, using a piece of paper (preferably tracing paper) sufficiently large for the full-sized pattern, measure off the exact area you wish the pattern to occupy. Divide this area into the same number of squares as appears in the smaller pattern. Number the outside squares on the paper in the same manner as you have numbered the original pattern.

Copy carefully into each of the large squares the portion of the design that appears in each correspondingly numbered square of the original pattern.



"I get nervous when you're on the ladder. Give me \$25 and I'll run downtown and do some shopping!"

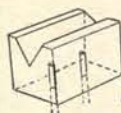


Handy Soldering "Clamp"

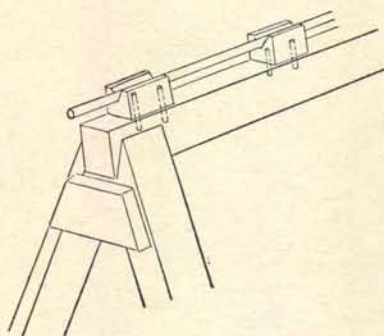
Fitted over a spool of wire solder, as indicated, a rubber band cut from an inner tube will position work to be soldered. It also will hold a tin of paste flux on the end of the spool.
John A. Comstock, Wellsboro, Pa.

Wire Brush Improved

If a wire brush is not stiff enough for a particular job, wrap a layer or two of friction tape around the bristles to prevent them from flexing.
Mrs. Ernest Miller, Lansing, Mich.



Dowels To Fit Into Horses



V Blocks for Sawhorses

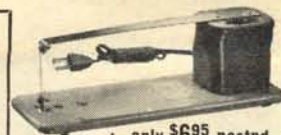
By making a few of the V blocks as shown in the illustration, you can handle pipe, tubing, posts, etc., quite easily and efficiently on your sawhorse. For long work it is suggested that three V blocks of this type be used, with holes bored in the horse to accommodate dowels fitted in the blocks as indicated.
M. Robert Beasley, Detroit, Mich.

To Remove Stubborn Screw

Loosen a screw stubbornly imbedded in an enamelled surface by heating the screwdriver, holding it in or above the slot until enamel is melted out; reheat and hold in slot until surrounding enamel is softened so you can turn the screw gently. Persist with the heating and get the screw or screws out without marring the enamel.

Morris A. Hall, White Plains, N. Y.

SAW WITH HEAT!

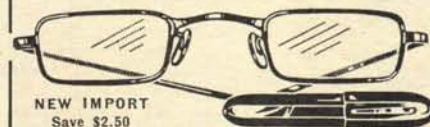


only \$6.95 postpd.
while supply lasts

NEW THERMO-SAW CUTS CLEAN, FAST THROUGH WOOD, PLASTIC . . . OTHER MATERIAL!

A real timesaver in any workshop! Ideal for cutting difficult patterns, precision model-making, shaping tile, etc. Cuts up to 14" x 36" board. Special transformer produces High Frequency current from 110V 50/60 cycle AC house current. No noise, vibration, sawdust or Radio-TV interference. No turning of work; tough steel blade cuts in every direction. **ONLY \$6.95 POST PAID INCLUDES FREE PATTERN AND 12 SPARE BLADES.** No C.O.D.s, please. **MONEY BACK GUARANTEE. ORDER TODAY.** Sold Mail Order U. S. only.
BOISSELIER MFG. CO., Dept. W90, Box 188, Glen Ellyn, Ill.

MAGNIFYING GLASSES



NEW IMPORT
Save \$2.50

MAKE SMALL PRINT READ BIG

Sensational money saving offer. Enjoy reading, sewing, make delicate repairs. **SEEING IS BELIEVING** with these amazing new glasses. Use like bifocals, look over or under for distance. Perfect for home, office, shop, travel and shopping.

\$2.98
2 for \$5.00

SAVE MONEY — 10 DAY TRIAL

Thousands of men and women customers using these glasses in all lines of work and professions. All like the handy pen-like case. Money-back guarantee if you do not have astigmatism or eye disease. State age. Send M.O., Check or Cash, we pay postage. If C.O.D. postage is added. Agents Wanted.

DALO, Dept. 29, 4333 N. Crawford Avenue
Chicago 41, Illinois

ELECTRIC WELD - BRAZE & CUT

REPAIR MOST EVERYTHING MADE OF METAL

Home appliances, Auto parts, Farm-garden equipment, toys. Make and repair playground equipment. Lawn chairs, tables, ornamental iron work, etc.

Solder, heat, bend and straighten with terrific heat from arc torch. Cut and weld up to 1/4" steel plate. A million uses for Home, auto, farm, inventors, factories, etc. Works from any 110 volt plug-in. Complete with welders mask, arc torch, supply of welding and brazing rods, and complete Welding Instruction Book. Attractive—portable—efficient. 1 yr. guarantee.

SEND ONLY \$3.00 (cash, ck. mo) and pay postman \$9.95 plus C.O.D. pstg. on arrival or send \$12.95 for P.Paid Delivery. Ideal gift for mechanically minded home owners, relatives, friends. Available only from: **MIDWAY WELDER, Dept. DW-10, Kearney, Nebr.**

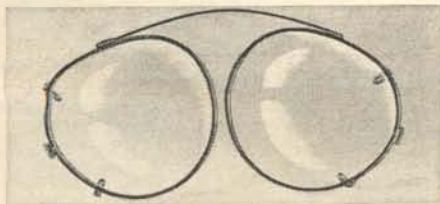
MUSIC LEARN AT HOME!

Be your own music teacher. Learn quickly, right at home, to play piano, guitar, accordion, any instrument. Our famous pictured lessons make it easy. No boring exercises. Start playing simple pieces right away. Low cost. 1,000,000 students, including Lawrence Welk. Write for **FREE** book. No obligation. No salesman will call. U. S. School of Music, Studio 659, Port Washington, N. Y.

THROW AWAY YOUR "RABBIT EARS"

ELIMINATE UNSIGHTLY "RABBIT EARS" AND OUTSIDE TV ANTENNAS! Different and better than ALL OTHER socket TV antennas tested! Uses no power—no shock hazard. Completely out of sight behind TV set. Lasts forever. Anyone can attach it—NO TOOLS NEEDED! SHARPER, CLEARER TV PICTURES ON ALL CHANNELS IN YOUR AREA! Guaranteed to work better than any other inside TV antenna or money back in 10 days! **SEND ONLY \$4.99** (cash, ck. mo) for postpaid delivery in USA. Works on ALL MAJOR TV SETS, OLD OR NEW. **PLUG-TENA AVAILABLE ONLY FROM: WESTERN RADIO, Dept. PW-10, KEARNEY, NEBR.**

New "CLIP-ON" Magnifiers



Make Reading Easy

Now, everyone who wears prescription-made eye glasses can "CLIP ON" these wonderful magnifying lenses. Make small print read bigger. No need for extra reading glasses. Clip on and off in a second. Can only be worn on other glasses (not bifocals). Read the Bible, do fancy work with ease. Fit any type and size. **10 Day Home Trial.** Send name and address. On arrival pay postman only \$4, plus C.O.D. Satisfaction guaranteed. Or send \$4, we ship prepaid. Ideal gift. Order today from:

PRECISION OPTICAL CO., Suite 58-L, Rochelle, Ill.



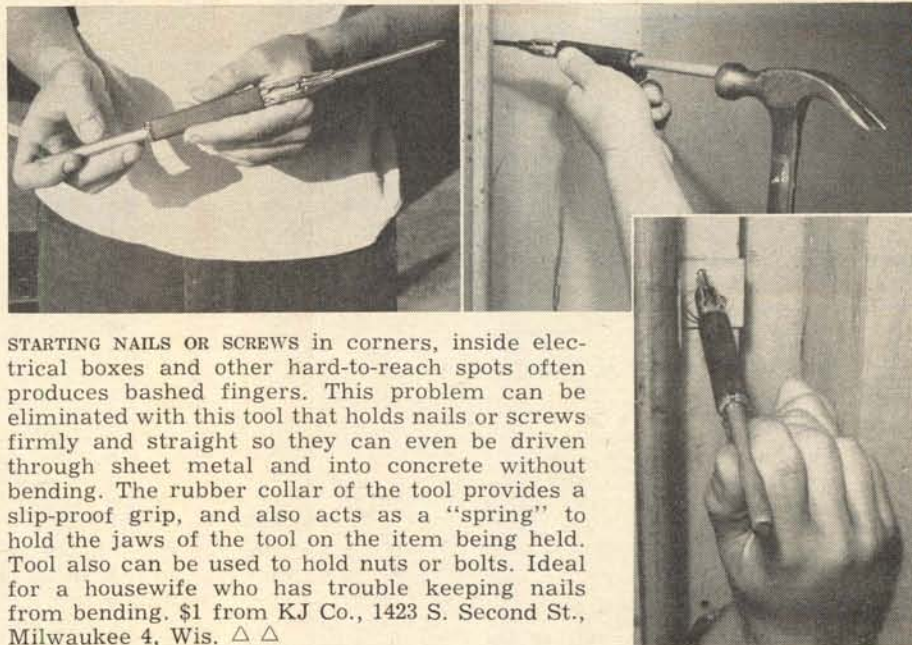
119 JIG SAW PATTERNS

FULL-SIZE . . . trace on wood and saw out. Clever, ORIGINAL designs, things you can make to SELL. Wall shelves, lawn signs, planters, book ends, others. **\$1** postpaid

BURGESS VIBROCRAFTERS, INC.

Rush \$1 today. Dept. C-166, Grayslake, Illinois

Nail Driver-Screw Starter



STARTING NAILS OR SCREWS in corners, inside electrical boxes and other hard-to-reach spots often produces bashed fingers. This problem can be eliminated with this tool that holds nails or screws firmly and straight so they can even be driven through sheet metal and into concrete without bending. The rubber collar of the tool provides a slip-proof grip, and also acts as a "spring" to hold the jaws of the tool on the item being held. Tool also can be used to hold nuts or bolts. Ideal for a housewife who has trouble keeping nails from bending. \$1 from KJ Co., 1423 S. Second St., Milwaukee 4, Wis. $\Delta \Delta$

Workshop Intercom



"Come on upstairs, Husband, dinner is ready," says this housewife in a normal tone of voice. No need for shouting down the stairs.



"Be up in just one minute; just want to finish a repair job on Sally's tricycle," Dad answers, with no need to shout.

WHY HAVE YOUR WIFE SHOUT down the basement stairs, or across the yard to the garage when she wants to call you from the workshop? You can save voice, time and temper with an intercom that can be installed in less than an hour. The master unit is located in the kitchen—where your wife spends most of her time—and the slave unit is placed somewhere in your shop—where you spend most of your time. The master is plugged into any convenient 110-volt outlet and bell wire is led from it to the slave unit in your shop. Both units and 50 ft. of wire are supplied as a package. E-Z Talk, Mark Simpson Mfg. Co., 32-28 49th St., Long Island City 3, N. Y. $\Delta \Delta$

BARGAINS!

IMAGINE GETTING BANKRUPT, CLOSEOUT, BUYS SUCH AS THESE!



- \$1 Val. Chlorophyll Tablets, 7½c pkg.
- 15c Textile dyes, 3½c pkg.
- \$12.95 Val. Name brand Kitchen set, \$3.25
- \$4.98 Port. Washing Machine, 20c.
- POSTAL SCALES, 7½c each!
- \$2.98 Horserace game records, 30c ea.
- \$1.95 Ret. Men's silk ties, 12½c each!
- PENCILS, 144 for 57½c!
- 69c Ret. Insect Repellent, 5c each!
- CHRISTMAS SEALS, 25c per 1000!
- ENVELOPES, 50c per 1000!
- 35c DRESS PATTERNS, 3c each!
- Calendar Wrist Watches, \$5.00 each!
- \$10 Ret. Men's Toiletry Sets, 60c each!
- New Bobby Pins, 70c per 700!
- \$5.50 Ret. Lucite Hairbrushes, 65c ea.!
- \$1.75 Rudolph kids toiletry sets, 35c.
- NEW HAIRNETS, ½c each!
- \$1 Retail Automatic Card Shufflers, 9c each.
- 39c Under Arm Deodorant, 2c jar!
- 25 card asst. Xmas cards, 11c box!
- 50c Everyday greeting cards, 7½c box!
- Govt. Surplus Typewriters, \$23.
- \$1-\$3 Hard covered books, 20c each!
- 49c Retail Xmas window decorations, 10c per set.
- \$49.95 Ret. 7x50 Binoculars, \$12.95.
- \$15 Retail Electric Percolators, \$5 ea.!
- New Phono Records, 45 & 78 RPM, 7c each.
- BUTTONS, 144 for 25c.
- CIGARETTE HOLDERS, 1c each.
- \$1 Kiddies Handbags, 3c each.
- \$1 Val. Billfolds, 15c each.
- \$2.50 Val. Wallets, 30c each.
- LADIES APRONS, 6¼c each.
- D. E. Razor Blades, \$1.50 per 1000 blades.
- \$1 Mufflers, Scarfs, 12½c each.
- Plastic Toy Guns, 2c each.
- 25c Rudolph Reindeer brooches, 2c each.
- 69c Insect Repellent, 5c each.

(Above bargain list merely illustrates type of Bargains usually found in this paper. Lists Naturally change from month to month.)

PLUS HUNDREDS OF OTHER SENSATIONAL BUYS!

ONLY IN "BARGAINS" WILL YOU Find Every Month Similar—

- **BANKRUPT, CLOSEOUT, SURPLUS BARGAIN OFFERS** • **BARGAINS AT WHOLESALE**
- **BELOW WHOLESALE** • **RARE MONEY MAKING OFFERS** • **New and Unusual Item Information**

ONE issue of this SENSATIONAL Publication can make or save you MORE MONEY than the COST OF THE ENTIRE SUBSCRIPTION! This is the ONLY Big National paper of this type in circulation! You'll be AMAZED, FLABBERGASTED and DELIGHTED at the wonderful listings in every issue!

Toys, Books, Jewelry, Greeting Cards, Cosmetics, Household Merchandise, Appliances, Industrial Materials, Machinery, Tools, etc.

Bargains as low as 10¢-25¢ on the Dollar!

MAKE FANTASTIC PROFITS!

IT'S HARD to believe, but IT'S THE TRUTH! Terrific Bargains can save you 40%-80% or more on every dollar you spend!

ONLY PAPER OF IT'S KIND AVAILABLE!

Search your newsstand high and low. YOU WON'T FIND ANOTHER PAPER ANYWHERE LIKE IT! "Bargains" is available by SUBSCRIPTION ONLY. It's the only paper we know in existence that actually lists Bankrupt, Closeout, Surplus offers every month. Bargains so rare and terrific, you'll blink your eyes in amazement!

BIG 1960 CHRISTMAS ISSUES!

Your subscription will automatically include the BIG 1960 CHRISTMAS ISSUES—just in time for the big holiday season. Special issues jammed full of amazing holiday bargains. Imagine being able to buy \$1.00 worth of goods at 15c, 25c or 35c.

BUY CHEAP—SELL CHEAP! That's why thousands of smart salesmen, store owners, jobbers, etc. buy this paper! They know where to buy at CHEAPEST PRICES! NO REASON why YOU can't DO THE SAME! Many articles, features every month show you HOW to sell bargains for big profits—if you don't know how!

How To Buy! How To Get Ahead!

"BARGAINS" also features pages of interesting articles & features on how to buy wisely; How to add to your income; How to make spare time profits.

SAVE Up to \$1000—EARN Up to \$3000!

We HONESTLY think it's possible for you to do this within a year's time. For PROOF... see testimonial letters... or better still, PROVE IT FOR YOURSELF BY SUBSCRIBING.

JUST \$2.00 FOR 12 BIG ISSUES!

Reg. Price is \$3.00 per year, BUT YOU CAN STILL BUY 12 BIG ISSUES FOR \$2.00! Just 18¢ per month! Save yourself \$1.00 by subscribing now. AND SEE OUR AMAZING MONEY BACK IF NOT PLEASED OFFER BELOW! Act Fast, this offer is subject to withdrawal at ANY TIME!

"BARGAINS"

Box 591-EC, Lynn, Mass.

O.K. Here's my \$2.00 for 12 BIG ISSUES. Rush me first copy! Canada \$2.50, Foreign \$3.00.

Name.....

Address.....

City.....State.....

Remember! Your Money Back IN FULL if the 1st issue that you receive doesn't please you!

Your Money Back IN FULL if the First Issue Doesn't Please You!

WHAT CAN YOU LOSE? If you are not delighted with your 1st issue, you can have your money back IN FULL! No quibbling about it either! CAN WE MAKE A MORE STRAIGHT-FORWARD OFFER THAN THIS?

"BARGAINS", Box 591-EC, Lynn, Mass.

Look What Subscribers Are Saying!

Here's What Subscribers say about "Bargains" After Receiving Their first copies!

"... Your book BARGAINS is just wonderful and I am very glad I subscribed to it."—H. K., Port Monmouth, N. J.

"... As a result of answering one of the ads (in Bargains) it has resulted in extra profits of \$40.00 and upwards per month."—J. H. Alabama.

"... Saw your wonderful paper and enjoyed every bit of its reading and adv. It's a Great Paper."—M. S., Vermont.

"... I am very pleased with BARGAINS. I have never seen anything like it and am looking forward to my future copies especially the Christmas edition."—Mrs. D. M., Maine.

"... Received my first issue of Bargains and may I say it is a great magazine."—M. H. C., Alabama.

"... I think BARGAINS is the best merchandise publication I have ever seen (And I have seen hundreds)."—S. P. C., Brooklyn, N. Y.

"... Received my 1st copy of BARGAINS the other day and am very pleased, the information you publish may be just the 'shot in the arm' my business needs."—D. S., St. Albans, N.Y.

"... I have found your magazine very helpful."—W. A. P., Ogdensburg, N. Y.

"... Received your paper. Thank you very much. It is one of the finest we have ever seen."—F. D., Iowa.

"... I was the recipient of my 1st copy a few days ago. I am completely satisfied with the periodical. I also wish to express my appreciation to you for having made the magazine available to me. I shall be pleased to continue my subscription as long as the magazine is available."—W. S., Wash.

"I have been a subscriber of your 'Bargains' magazine for nearly 2 years, and very much pleased with it. I wouldn't want to miss a copy of it. So I am sending in the valuable coupon you sent me with \$2.00 in cash. I am so glad to be one of your subscribers."—Mrs. E. L., Richmond, Calif.

PLUS MANY OTHERS!

THE ABOVE LETTERS WERE NOT SOLICITED IN ANY WAY OR MANNER—ALL ARE IN OUR OFFICE FILES!

They are the enthusiastic reaction of subscribers after seeing their first copies of BARGAINS!

New Rubber Stamp Business Pays Beginners ^{UP} TO \$9.20 an hr.

START AT HOME IN SPARE TIME WITH THIS LITTLE TABLE TOP MACHINE

The multi-million dollar Rubber Stamp Business—once controlled by a few big companies—is now being taken over by small home operators—one in each community throughout the U. S. Men and women who have this inexpensive machine can turn out huge quantities of Rubber Stamps with special wording that buyers once were forced to order from big cities. Material costing only 27¢ makes a stamp that sells for \$1.80. The machine that does the work is simple and easy to operate and it turns out as many as six Rubber Stamps at a time each with different wording such as names, addresses, notices, stock numbers, prices and other "copy" needed by factories, offices and individuals. Working full capacity, it can earn as much as \$9.20 an hour for the operator! Now you can get into the big-pay business yourself with your own home as headquarters. You don't need any experience. We supply everything, including complete instructions and eight ways to get business coming in fast. Start making up to \$9.20 an hour from the very beginning. Cash in on the profitable Rubber Stamp business in your community right away.



WEIGHS ONLY 11 POUNDS!

TAKES UP
ONLY 2
SQUARE FEET
OF SPACE

●●● Read the complete and fascinating Rubber Stamp story in a big 110-page Book. The book is profusely illustrated with more than 100 pictures and photographs. And you can read it for a full two weeks without risking a penny of your own money!

NEW WARNER SUCCESS PLAN

Tells How to Build—Step by Step—to Big Profits and Personal Independence. Read This Plan for Two Weeks Entirely At My Risk!

In this amazing Plan you will find exact and detailed instructions for starting a Home Business in spare time—without giving up your present job and without risking the loss of a single pay check. The Warner Plan shows you—with pictures, photographs and drawings—just how to make Rubber Stamps just as good as those turned out by the big companies. It shows how to get orders without canvassing or house-to-house selling. It shows you how to expand, how to get others to work for you and how to be SURE of at least twice the money you make on your present job for a life of personal independence.

RUBBER STAMP DIVISION
1512 Jarvis Ave., Dept. R-6-K, Chicago 26, Ill.

But don't make any decision now. Read the Plan first—entirely at my risk. Then—after you have made a careful investigation—after you have talked things over with your family—only then do you decide what you want to do.

**ALL
FACTS
FREE**

The thing to do now is to get full details which I'll send you FREE no salesman will call to urge you to buy anything. Mail coupon now—or just send a postcard—and I'll see that complete information goes out to you by return mail—postpaid.



**Here's what
the new
WARNER
PLAN
Tells You
about
Making Money**

1. HOW TO have fun **now** and at the same time provide for a secure and prosperous **future**.
2. HOW TO check the advantages of operating a Rubber Stamp Business in your own community.
3. HOW TO acquire a general knowledge of the business based on a brief history of the Rubber Stamp.
4. HOW TO visualize the scope of the Rubber Stamp market.
5. HOW TO make a Rubber Stamp (general outline).
6. HOW TO assess the value of Warner Equipment.
7. HOW TO get acquainted with the "Tools of your Trade."
8. HOW TO make a Rubber Stamp (Specific procedure).
9. HOW TO mount a vulcanized Rubber Stamp.
10. HOW TO make "Special" Rubber Stamps.
11. HOW TO cut plastic Matrix Board for the chase.
12. HOW TO get the right price for the Rubber stamps you make.
13. HOW TO price your complete Rubber Stamp Line.
14. HOW TO set up your workshop.
15. HOW TO get the most out of Warner's "Eight Tested Sources for Getting Business."
16. HOW TO get started on a cash outlay so small that you can get back your entire investment inside of two weeks.

FIRST CLASS

Permit No. 34316

Chicago, Illinois

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Postage Will Be Paid By

RUBBER STAMP DIVISION

1512 Jarvis Ave. Chicago 26, Illinois

Dept. R-6-K

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Stamp
Needed**

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line. Fill in
name and
address.

Drop in Mail
Box. No Stamp
Needed.

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ADDRESS
CITY

STATE
ZONE
CITY